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The Implication of Data Concentration on EU Merger Control

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Summary

It has been widely recognized that data could be an asset,[1] which indicates that the concentration of data could increase companies' market power beyond traditional competition law sense. Under such a background, Commissioner Vestager has described data concentration as a new barrier to EU competition law.[2] The combination of datasets could benefit innovation and provide better services to consumers, but it also raises competition concerns such as barriers to entry, exploitative behaviors and subsequent consumer harms. Commission has claimed that the concentration of data will impact both sides of the market, and it will take privacy harm into consideration when conducting merger assessment.[3] However, being affected by the long-standing price-centered approach in competition assessment, Commission, in many of its decisions, only examined the impact of combining datasets on one side. It only looked at the effects on the 'paying side' and overlooked the detrimental effects to consumers on the 'free side'. Under such a situation of little emphasis has been put on 'free side' consumer harms, the role of commitment has to be stressed as a remedy to data concentrated merger. However, commitment is seldom introduced in EU data concentrated merger cases to offset 'free side' concerns. In this context, Commission's competition assessments of tech mergers are important in showing how data accumulation could be relevant as a competition concern in the EU and how these concerns could be addressed during merger investigations. Finally, what need to be changed is the approach to different competition parameters, instead of the law itself.[4]

Therefore, this thesis focuses on examining the implication of data concentration on EU merger assessment and how Commission should react to it when they conduct competition assessment. Followed by introduction to the background of the topic and current state of research, the second part of the thesis will focus on analyzing how data concentration will reveal competition concerns by exploring Commission's competence in relation to merger review. In this part, a case review of three major data concentrated merger cases (Facebook / WhatsApp, Microsoft / LinkedIn and Apple / Shazam) will be conducted to see Commission's attitude towards the impact of data concentration on both sides of the market in practice. After clarifying the interplay between big data concerns and competition assessment, the third part will be devoted into the exploration of theories of harm. There is no convergence of theories of harm, therefore, harms arising from concentration of data will be discussed at both the competition market and customers (intermediate and end users) level in this thesis. Fourthly, for better assessing data concentration while ensuring market activity on zero-price market, the role of commitment will be explored as a remedy to the clearance of merger. The designation of remedy is addressed

[1] Recognizing data as an valuable asset has been written as one of data principles, see Plymouth, 'Principle 9: Data is an Asset' < http://blogs.plymouth.ac.uk/strategyandarchitecture/enterprise-architecture-with-plymouth-university/plymouth-university-architecture-repository-2/enterprise-architecture-principles/data-principles/principle-9-data-is-an-asset/> (*Plymouth University Blog*) accessed 18 May 2020; See also John Ladley, *Data Governace: How to Design, Deploy, and Sustain an Effective Data Governance Program*' (2nd edn, Mara Conner, 2019) p 16; Virginia Collins and Joel Lanz, 'Managing Data as an Asset' (*The CPA Journal*, June 2019) < https://www.cpajournal.com/2019/06/24/managing-data-as-an-asset/> accessed 18 May 2020

[2] Margrethe Vestager, Refining the EU merger control system (Brussels, 10 March 2016) <https://wayback.archive-it.org/12090/20191129204644/https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/refining-eu-merger-control-system_en> accessed 18 May 2020

[3] *Microsoft / LinkedIn* (Case M.8124) Commission Decision of 12 June 2016 C(2016) 8404 final [2016], para 350 and footnotes 330

[4] Simon Holmes, 'Climate Change, Sustainability, and Competition Law' [2020] Journal of Antitrust Enforcement 354

through both companies' privacy policies pre-merger and commitments provided to or required by Commission during merger assessment. Finally, the conclusion will have a brief look on the current discussion of necessity and possibility of upgrading EU merger regulation.

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Anshun, China
Zhengmin Li
May 2022

Abbreviations

4V: Variety, Volume, Velocity, and Value

API: Application Program Interface

CJEU: Court of Justice of European Union

CRM: Customer Relationship Management

Commission: European Commission

EU: European Union

EUMR: European Union Merger Regulation

FTC: Federal Trade Commission

GDPR: General Data Protection Regulation

PSN: Professional Social Network

SIEC: Significant Impediment to Efficient Competition

SSNDQ: Small but Significant Non-transitory Decrease in Quality

SSNIP: Small but Significant Non-transitory Increase in Price

1. Introduction

1.1. Background

Under data-driven business model, for achieving economies of scale and scope in double-sided market, companies have shifted a lot from solely focusing on competitors' advantages to connect it with exploiting data provided by consumers.[5] In order to obtain competitive advantage from consumers by collecting and using as much data as they can, merger activities have been seen as the easiest choice.[6] With the collection and use of great volume of data, companies could promote innovation activities and provide better personalized services to consumers. However, along the way lead to the realization of these benefits, it is unavoidable that some actions may endanger consumer welfare and competition market.[7] These concerns have caught Commission's attention since TomTom's merger with Tele Atlas and Google's acquisition of DoubleClick which both happened in 2008.[8]

Through years' development of the assessing approach (see supplement A), Commission has found a way to tackle the implication of data concentration on competitors when data constitutes an essential input. This could be seen from Apple's acquisition of Shazam where Commission found that though Apple may have exclusive control over Shazam's data, this will not create any foreclosure effect by referring to the "Variety, Velocity, Volume and Value of Shazam's data.[9] However, regarding the implication of data concentration on companies' market power and end users, it seems like that there is no consistency in its competition assessment in practice. The most controversial discussion on the inconsistency could be seen from Commission's decision in Facebook / WhatsApp and Microsoft / LinkedIn case.

In these two cases, Commission used similar approaches in the assessments, while it came to different opinions and conclusions.[10] It cleared Facebook's merger with WhatsApp unconditionally, while in Microsoft's merger with LinkedIn, it required Microsoft to provide certain commitments to offset potential anticompetitive concerns.[11] However, Facebook and Microsoft's post-merger behaviors may indicate the inappropriateness of measures that Commission used in assessing the impact of data accumulation on end users. After merger,

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[5] Michael E. Porter, 'The Five Competitive Forces That Shape Strategy' [2008] Harvard Business Review 78

[6] European Data Protection Supervisor, 'Report of EDPS Workshop on Privacy, Consumers, Competition and Big Data' (2014) <https://edps.europa.eu/sites/edp/files/publication/14-07-11_edps_report_workshop_big_data_en.pdf> accessed 28 April 2020

[7] French German Joint Report, 'Competition Law and Data' (10th May, 2016) < https://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Big%20Data%20Papier.html> accessed 12 April 2020, pp 11, 25

[8] *TomTom / Tele Atlas* (Case COMP/M.4854) Commission Decision of 14 May 2008 C(2008)1859 OJ C 237/12, para 276; *Google / DoubleClick* (Case COMP/M.4731) Commission Decision of 11 March 2008 C(2008) 927 final OJ C 184/10, para 368

[9] Apple / Shazam (Case M.8788) Commission Decision of 9 June 2018 C(2018) 5748 final [2018] OJ C417/04, paras 318 – 330

[10] *Facebook / WhatsApp* (Case COMP/M.7217) Commission Decision of 10 March 2014 C(2014) 7239 final, para 164 where Commission declared that any privacy-related concerns flowing from concentration of data fall within the scope of data protection law and do not fall within the scope of competition law. *Microsoft / LinkedIn* (n3) where Commission found that privacy is an important parameter and driving consumers choices. However, the fact is that during its investigation into Facebook's merger with WhatsApp, there was also evidence showed that privacy is one of the reasons why some of the consumers choose to use WhatsApp. But Commission did not consider it in Facebook / WhatsApp merger.

[11] *Facebook / WhatsApp* (n9) para 191; *Microsoft / LinkedIn* (n3) para 470

Facebook has lowered WhatsApp users' privacy protection policy for several times without worrying about triggering data protection laws (See table A below). By enjoying the leeway that it will not be caught by law, Facebook could exploit WhatsApp users' personal data to the best because all the data are within its exclusive control and traditional merger assessment does not treat privacy protection as one of competition parameters.

Table A: changes of WhatsApp privacy policies post 2014 merger

Time	Post-merger changes
18 January 2016	Removed subscription fees completely
25 August 2016	Share user's account information with its parent company Facebook (user remain the choice of opt out sharing within 30 days of notification), including linking WhatsApp user's phone numbers with Facebook user's identities
25 January 2019	Zuckerberg announced that he plans to Integrate WhatsApp, Instagram and Facebook Messenger

However, while Facebook could escape from data protection authorities' investigation for its abusive conducts, it has caught several European competition authorities' investigations (See supplement B). Among which, Bundeskartellamt directly required it not to combine WhatsApp users' data with Facebook Messenger's data and not to change WhatsApp's privacy policy.[12] The merger with WhatsApp largely increased Facebook's market power in online social network market and gave it the opportunity to profit more from advertising to WhatsApp users. Particularly, users could seldom realize that their privacy and choices might have been infringed. This has been identified by EU Directorate-General's report where it found that consumers are suffering discrimination in digital economy due to the lack of sufficient intervention by competition authority.[13] The negligence during merger assessment not only deprived consumers from certain choices they had and valued pre-merger, but also increased the burden for competition and data protection authorities on concerns which could have been addressed during merger reviews. Importantly, the fines imposed by competition authorities are not heavy compared to Facebook's revenue,[14] but the harm on consumers were more serious.

Two years after the clearance of Facebook's merger and the following investigations, Commission seemed to be more cautious in assessing Microsoft's merger with LinkedIn. In this case, Commission expressed its concerns on Microsoft's market power as a multi-service

[12] Bundeskartellamt, 'Bundeskartellamt prohibits Facebook from Combining User Data from Different Sources' (*Press Release*, 2 February 2019) <https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Pressemitteilungen/2019/07_02_2019_Facebook.pdf?__blob=publicationFile&v=2> accessed 17 February 2020

[13] Directorate-General for Internal Policies, 'Discrimination of Consumers in the Digital Single Market' (2013) pp 57, 75-76. See also European Data Protection Supervisor, 'Privacy and Competitiveness in the Age of Big Data' (26 March 2014) <https://edps.europa.eu/sites/edp/files/publication/14-03-26_competitition_law_big_data_ex_sum_en_0.pdf > accessed 17 March 2020, para 69

[14] When Facebook was fined € 110million by Commission, its revenue was €7 billion in that quarter. Cara McGoogan, 'Facebook hit with €1.2m fine in Spain for breaking privacy laws' (*The Telegraph*, 11 September 2017) <https://www.telegraph.co.uk/technology/2017/09/11/facebook-hit-12m-fine-spain-breaking-privacy-laws/> accessed 26 May 2020

provider during the assessment.[15] In order to address the foreclosure effect on LinkedIn's competitors, it asked Microsoft to provide a commitment of not integrating LinkedIn into Microsoft's Outlook Program for five years and securing competitors' access to data stored in Azure Cloud.[16] After the 2016 conditional clearance, Microsoft's only action which involved LinkedIn is just moved LinkedIn's data into its Azure Cloud and limit the use of LinkedIn's data center. At least, till now the result of this merger review is still positive and does not result in any following investigations. Even moving LinkedIn's database, this could be seen as providing better protection as Azure, as a larger Cloud service provider, has the stronger ability to defense outside attacking. The commitments provided in this case not only secured professional social network service providers' access to Microsoft's system and constrained Microsoft's potential anti-competitive conduct, but also maintained consumers previous range of choices and privacy protection level.

During merger assessment, Commission is required to balance both pro-competitive and anti-competitive effects to avoid the potential infringement of anti-trust enforcement to the greatest extent. [17] Especially when the merger involves multi-service providers who hold large market power. The measurement of market power is not only limited to the defined relevant market, but also any markets as long as it could be linked with the acquired business. If Facebook's merger happened after Microsoft's merger, it would be hard to say that it will still get an unconditional clearance. After all, it seems like a commitment of requiring Facebook not to link WhatsApp users' data will certainly reduce the burden of the following investigations which did reveal consumer privacy harm and other anti-competitive conducts such as abuse of dominant position.

1.2. Research question and objectives

There is no doubt that data concentration in multi-sided market plays a role in Commission's merger assessment, but as to how far should Commission consider and address the impact of data concentration still remains unclear. Till now, Commission has put sufficient emphasis on the impact of data concentration on 'paying-side' when data constitutes an input, but as to the impact on 'free-side' and when data is not an input, the emphasis is still very limited.[18] However, data concentration's impact exists not only when it constitutes an essential input, but it spreads all aspects of the merger transaction which may extends to final users.

Thus, the core research question of this thesis is to explore how Commission could better address data concentration impact to a broader context which includes both intermediate and end consumers. Under this question, the following objectives will be addressed:

1) Identify how far is Commission willing to / should go in assessing the impact of data concentration.
2) Address the challenges that Commission faced in assessing the impact of data concentration.

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[15] *Microsoft / LinkedIn* (n3) para 349 and 350

[16] ibid 449

[17] Elias Deutscher, 'How to Measure Privacy-related Consumer Harm in Merger Analysis? A Critical Reassessment of the EU Commission's Merger Control in Data-driven Markets' (2018) European University Institute Working Paper Law 2018/13 < https://cadmus.eui.eu/bitstream/handle/1814/58064/WP_2018_13.pdf?sequence=1> accessed 8 April 2020.

[18] Though after long years' back and forth, privacy consumer harm is recognized as constituting a parameter in competition assessment, data concentration impacts still have not addressed completely. See *Microsoft / LinkedIn* (n3)

3) Thirdly, as data concentrated merger also brings efficiency to consumers and Commission is unlikely to block a merger just due to non-price reasons, this thesis proposes a few remedies which is expected to be used to address potential anticompetitive effects and consumer harms.

1.3. Current state of research

Lots of discussions have been aroused on the topic of data concentration impact on competition law. For example, Jason Furman has stressed the importance of using merger control to prevent the potential anticompetitive effects in big data merger, and he has proposed that "*competition authority should take more frequent and firmer actions to challenge merger through giving higher priority to digital merger*".[19] Indeed, merger control as the ex-ante measure could be served as a good tool for preventing anti-competitive effects. However, there is still no consistent results produced as to how Commission should react to data concentration in merger review.

Currently, being affected by Commission's approach of focusing on 'paying side' market and addressing little 'free side' market consumer harm concerns, research is more conducted on how to address 'free side' privacy harm as a competition parameter. Lots of literatures have been published on the discussion of privacy integration in competition assessment.[20]

For example, some proposals have suggested considering privacy as part of product or service quality[21] which has been admitted by Commission to a limited extent.[22] However, most of discussions on this idea just directly take quality theory as part of competition parameter while failed to establish the link between privacy and quality. In other words, the scope of product or service quality has not been well addressed. Regardless of this omission, some people have argued that quality is a highly subjective term and consequently, it might be hard for Commission to assess privacy degradation in terms of quality.[23] Thus, privacy as non-monetary price has been proposed as a complementary to quality theory of harm.[24] This idea might be the most relevant and obvious one in assessing the role of personal data in competition assessment as personal data does to some extent constitute the money that consumers pay for receiving free services and products. Furthermore, some people even proposed 'maverick firm theory of harm' as some merger does not reach Commission threshold.[25] Though this might catch some mergers which seek to obtain competitive advantage through acquiring startups,

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[19] Jason Furman, 'Unlocking Digital Competition: Report of the Digital Competition Expert Panel' [2019] < https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf> accessed 25 February 2020

[20] Cyril Ritter, 'Bibliography of Materials Relevant to the Interaction of Competition Policy, Big Data and Personal Data' [2016] <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2845590> accessed 17 May 2020

[21] Maria C. Wasastjerna, the Role of Big Data and Digital Privacy in Merger Review (2018) 14 European Competition Journal 417; Samson Esayas, 'Privacy as a Non-Price Competition Parameter: Theories of Harm in Mergers'[2018] University of Oslo Faculty of Law Research Paper No. 2018-26 < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3232701> accessed 26 May 2020;

[22] *Microsoft / LinkedIn* (n3) para 389; *Facebook / WhatsApp* (Case COMP/M.7217) Commission Decision of 10 March 2014 C(2014) 7239 final, para 164

[23] Elias Deutscher (n16) pp 11-12

[24] ibid pp 13 – 18

[25] Maria C. Wasastjerna (n20); Anca D Chirita, 'Data-Driven Mergers Under EU Competition Law' [2019] 1st edn, Oxford, Hart Publishing 44; Ariel Ezrachi and Maurice E. Stucke, The curious Case of Competition and Quality [2014] Journal of Antitrust Enforcement (2015) doi: 10.1093/jaenfo/jnv023 / University of Tennessee Legal Studies Research Paper No. 256 / Oxford Legal Studies Research Paper No. 64/2014 < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2494656> accessed 26 May 2020; Samson Esayas (n20)

the current referring system should be considered as sufficient to address the concern of that the high threshold might miss out some important cases. Apart from these, Nicholas Economides and Ioannis Lianos have proposed a market failure approach to address the privacy and exploitations concerns in digital economy as they think that the integration of digital privacy concern in some jurisdictions still premature.[26]

However, what must be noticed is that the consumer harm cannot be addressed by privacy theories of harm solely, it has to be linked with companies' market power and their abusive conducts. For example, since Commission has well examined the impact of data concentration when data constitutes an important input, this could be linked to the limitation on the range of consumers' choices. Thus, for addressing consumers harms on 'free side', it has to be achieved through addressing both markets' concerns. For reaching the conclusion of how Commission should conduct the assessment, Commission's margin of discretion and aims of EUMR must be addressed.

Another aspect of current state of research is that seldom of them reach to the point of potential remedies for data concentrated mergers. Most of the discussions ended up at finding out theories of harm and in which way should Commission consider privacy harm. Regarding this, this thesis makes a step further on how data concentration concerns could be addressed through merging parties' commitments where the potential anti-competitive effects does not necessarily lead to prohibition decisions.

1.4. Method and material

The main method employed in the writing of this master thesis is legal-dogmatic. Despite the difficulty in defining the internal and external scope of legal dogmatic, it is not used in answering specific legal questions, but rather aiming to give a systematic illustration of existing legislation with a view to solving unclarities and gaps between them and different societal conditions.[27] Jan M. Smits divides systematic process into three parts: description, prescription and justification.[28] Each of these three processes are closely interconnected with each other. Description requires to find the existing law (*the lex lata*) in a certain section. By doing so, it lays down the scope and language for discussing whether and how the societal changes could be resolved. After establishing the framework, the prescriptive value of legal dogmatic underlines that it is vital to search for practical solutions which could best integrate the new changes in an underlined framework. Finally, legal dogmatic also serves as a justification for the existing law.

This thesis mainly refers to the first two aims of legal dogmatic method. Firstly, it outlines relevant legislations which entail Commission the right and give Commission the guidance to conduct merger assessment. This part contains not only regulations, but also a series of cases given by European Court and decisions made by Commission itself. Both the statue and the

[26] Nicholas Economides and Ioannis Lianos, 'Restrictions on Privacy and Exploitation in the Digital Economy: A Competition Law Perspective' [2019] University College London (UCL) Centre for Law, Economics and Society (CLES) Research Paper Series 5/2019, August 2019 < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3474099> accessed 12 February 2020

[27] Alexander V. Petrov and Alexey V. Zyryanov, 'Formal-Dogmatic Approach in Legal Science in Present Conditions' [2018] Journal of Siberian Federal University 968

[28] Jan M. Smits, 'What Is Legal Doctrine? On the Aims and Methods of Legal-Dogmatic Research' [2015] Rethinking Legal Scholarship: A Transatlantic Dialogue, New York [Cambridge University Press] 2017, pp. 207-228, Maastricht European Private Law Institute Working Paper No. 2015/06, August 2015 < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2644088> accessed 26 June 2020

case law constitute the framework for the analyzing of the implication of data concentration on EU merger control. Secondly, for integrating the consideration of the implication of data concentration on consumers and a competitive market, this thesis goes to find out the impacts of data concentration. Consequently, for EU merger assessment to better adapting into digital age, the descriptive role of legal dogmatic plays an important role as it guides the finding of theories of harm and remedy frameworks.

In addition to legal dogmatic, when examine Commission's attitude and approach towards the impact of data concentration on both sides of the market, a case review is conducted to discover the change of Commission's attitude and approach. This part could be read together with supplement A which provide an overview of recent year data concentrated EU-wide merger activities. Furthermore, when doing case study, the empirical lessons learned from Facebook's merger with WhatsApp has been emphasized.

The main materials used in this paper are EU primary and secondary legislations, Commission documents and decisions, books, articles, and other online resources. A more detailed literature list could be found at the end of the thesis.

1.5. Delimitations

This thesis only deals with mergers at EU level, and not considering member states' merger control. Attitudes towards the impact of data concentration on 'free side' market has been developed differently in member states, but at Union level, Microsoft / LinkedIn case might pave the way for considering privacy as a parameter in competition assessment.[29] In addition, for avoiding multinational investigations, merging parties are willing to submit the case to Commission though the transaction is unlikely to reach EU threshold. For those considerations, a discussion at Union level might be more meaningful.

Secondly, it is too broad to address the implication of data concentration on all online activities in a master thesis, thus most of the considerations in this paper flow from the three mentioned cases, namely, Facebook / WhatsApp, Microsoft / LinkedIn and Apple / Shazam.

Thirdly, considering the turnover limitation and delimitation of relevant market concerns will be another issue in merger assessment, thus, this thesis will not include analyze on these two issues. Instead, it will only focus on challenges in measuring data concentration impact as a harm in competition assessment with a hypothesis that relevant market has been delimitated.

Lastly, in analyzing the competition assessment, some anti-trust enforcement practice made by EU member states and American's competition authorities have been mentioned, but this thesis will not give a comparative perspective. The reason why it was put here is just for illustrating how serious the consumer harms and anticompetitive actions might be if Commission overlook the impact of data concentration on 'free side' in merger assessment. Nonetheless, the focus of this thesis should always be put on merger review which is the preventive measure for ex-post competition enforcement.

[29] *Microsoft / LinkedIn* (n3)

2. The role of data concentration in competition assessment

Data concentration in merger cases means more the concentration of big data held by different entities. The impact of it is large than a pure concentration of data because the concerned data in mergers could be both original and processed data. Thus, in this part, this thesis will try to seek if data concentration can play a role in competition assessment through analyzing the competitiveness of big data, Commission's discretion, and its attitude towards data concentration mergers.

2.1. The competitiveness of big data

2.1.1. The characters of big data

While there lacks an official definition for big data, the characters of big data have been referred a lot when we try to get a definition for it. The characters of big data are originally characterized by three Vs – variety, volume, and velocity.[30] Variety means that the data are from different categories such as structured, unstructured, and semi-structured with different origins.[31] Volume indicates the quantity of data[32] and velocity refers to the generating speed of data.[33]

Apart from the most initial three Vs, some other thoughts have also been presented. For example, Katal also identified and proposed additional characters of variability, complexity, and value which enriched the definition of big data.[34] Be different from the meaning of variety, variability used by Katal focus more on inconsistencies features in peaks and valleys of the data from different sources due to different events.[35] J. Ranjan has proposed a ten Vs characters of big data.[36] In addition to the characters of value, volume, velocity, variety, variability, he added the characters of vagueness, validity, visualization, vulnerability and volatility. Kitchin indicated that big data should also be exhaustive and fine-grained. Though hot debate has been put here, does it necessary for data to have all the characters for being categorized as big data?

Commission has used four Vs - variety, volume, velocity, and value in its competitive assessment in Apple's acquisition of Shazam.[37] In this case, variety is used to underline the types of data hold by Shazam and Apple; Volume is used to calculate the amount of data hold by both parties; Velocity is used to assess how quick the data will be generated and how concentrated data will generate new data; Value is used as a measurement for the potential of data when data constitutes an input for the company. This is unprecedented and it reflects an

[30] Hashem Ibrahim Abaker Targio and others, "The Rise of "Big Data" on Cloud Computing: Review and Open Research Issues" (2015) 47 Information System 98,115
[31] Gandomi Amir and Haider Murtaza, "Beyond the Hype: Big Data Concepts Methods and Analytics" (2015) 35 International Journal of Information Management 137,144
[32] Lilli Japec and others, "Big Data in Survey Research" (2015) 79 Public Opinion Quarterly 839,880
[33] Babak Yadranjiaghdam, Nathan Pool and Nasseh Tabrizi, 'A Survey on Real-time Big Data Analytics: Applications and Tools' (IEEE, Dec 2016) <https://ieeexplore.ieee.org/document/7881376/authors#authors> accessed 5 May 2022
[34] Avita Katal, Mohammad Wazid and R. H. Goudar , 'Big Data: Issues. Challenges, Tools and Good Practices' (IEEE, August 2013) <https://ieeexplore.ieee.org/document/6612229> accessed 5 May 2022
[35] Monerah Al-Mekhlal and Amir Ali Khwaja, 'A Synthesis of Big Data Definition and Characteristics' (IEEE, Aug 2019) <https://ieeexplore.ieee.org/document/8919591> accessed 5 May 2022
[36] Ranjan Jayanthi, "The 10 Vs of Big Data framework in the Context of 5 Industry Verticals" (2019) 59 Productivity 324,342
[37] Apple / Shazam (n8) paras 315-318

idea that it seems like Commission holds the view that it is unnecessary for a dataset to have multiple characters when assess it during competitive assessment.

While the definition and characters of big data is defined, data concentration still need to be discussed. Literally, data concentration means the concentration or accumulation of big data which has already hold by different entities. But data concentration doesn't solely mean the concentration or accumulation of big data by volume, it also looks at the potential affects brought by the concentration of big data. This concentration will empower the acquirer to hold large amount of big data from different areas and aspects. In other words, data concentration is not about data, but the concentration of big original and generated data. As such, based on the characters, the competitiveness of data concentration must be analyzed.

2.1.2. The competitiveness of big data

Static data, regardless of the amount, will not challenge a competitive market and consumer welfare without big analysis and application skills. However, when it associates with the advanced technologies, it will be an important factor for protecting consumer welfare and a competitive market. Among the competitive advantages of big data, there are two advantages which are the most relevant ones in big data merger cases.

Firstly, the concentration of data can strengthen company's decision-making process and result. For example, a company might do user tests to observe how users are interested in their products or services. Through the test, the company would be able to know what to adjust to improve the competitiveness of their products and services. This has been used by several companies in practice, such as the driving sales system at Amazon and leadership development at Google.[38] This may improve innovation, but it may also endanger a competitive market when one company use this power to create entry barriers.

Secondly, big data gives company the opportunity to produce more personalized content.[39] This advantage can be seen from several occasions. In advertising area, by tracking and analyzing customers and users' habits, it is easier to post more relevant advertisement to the users. In online shopping, by analyzing the purchasing and browsing history data, company can present results which cater for customers. In general, the more need for personalized content, the more data will be collected and analyzed. Arguably, the privacy protection level will be decreased.

Being driven by those competitive advantages, companies are likely to gather and analyze the large amount of data. As such, the market power, in terms of data, is increased. In addition, they are unlikely to share it with competitors who may use it to compete with them. If the data are exclusively held by one company, the company will face less limits on the use of the data owned by them.

Though there are residual provisions in data protection law to guarantee the ethic use of data and the application of associated technologies, companies are more and more aggressive in using data to strength its power, such as using significant market power to abuse dominant

[38] Tim Stobierski, 'The Advantages of Data-driven Decision-making' (Havard Business School Online, August 2019) <https://online.hbs.edu/blog/post/data-driven-decision-making> accessed 5 May 2022

[39] IE University, Data is the Source of Future Competitive Advantage (Driving Innovation, November 2019) <https://drivinginnovation.ie.edu/data-is-the-current-and-future-source-of-competitive-advantage/> accessed 5 May 2022

position,[40] foreclosing competitors in the market,[41] and lowering privacy protection level[42] which should fall within competition rules arena. As such, it is necessary to analyze the scope of Commission's discretion and challenges it faced in assessing the impact of data concentration.

2.2. Commission's competence under EUMR

European Merger Control grants a very broad competence to Commission in merger assessment which encompasses all potential anti-competitive effects on competition market and harms on consumers. However, in assessing concentration in double-sided market, Commission seems to favor more on assessing the impact of concentration when data constitutes an important source of input and ignore its responsibility to assess the impact of concentration on end users. Therefore, regardless of data as an input, the following part will focus on the analysis of Commission's competence in relation to the impact of data concentration on consumer welfare on 'free side'. In addition, how privacy degradation – the most obvious consumer harm on free-side – would be relevant in competition assessment even if merging companies do not compete over it directly and instantly.

2.2.1. Explicit competence in EUMR

Though end users in double-sided market still have not been appraised as a single market[43] and the scope of Commission's competition assessment largely depends on the definition of relevant market, relevant parameters as mentioned in EUMR cannot be overlooked. Article 2.1 EUMR set down the general scope for appraising concentrations which confers Commission the task to ensure that '*concentration will not create or strengthen a dominant position as a result of which effective competition would be significantly impeded in the common market*' (SIEC test).[44] For specifying the parameters which might affect effective competition, Article 2.1.b EUMR gives an explicit list including market power, barriers to entry, interests of medium and end users, and etc.

Though Court of Justice of European Union (CJEU) has suggested that regarding substances, Commission enjoys a margin of discretion when conducting competition assessment as laid in article 2 EUMR[45] as long as the rules in article 2.2 is not altered.[46] However, Merger Control as a secondary legislation, Commission's competence in relation to these parameters has to be linked to a broader context of EU law.[47] This obligation requires Commission to comply with

[40] Bundeskartellamt (n11)
[41] *Microsoft / LinkedIn* (n3) para 351
[42] This is seen from Facebook's merger with LinkedIn, Facebook lowered WhatsApp users' privacy protection level and starts providing more accurate advertisement to WhatsApp users who are also Facebook users post-merger, see Table A.
[43] Joaquín Almunia, 'Speech – Competition and Personal Data Protection, Commissioner Joaquín Almunia' (*European Commission*, 26 November 2012) <https://ec.europa.eu/commission/presscorner/detail/en/SPEECH_12_860 > accessed 19 April 2020
[44] Council Regulation (EC) No 139/2004 of 20 January 2004 on the control of concentrations between undertakings (EUMR) [2004] OJ L24/1, Article 2.1
[45] Case C-413/06 P *Bertelsmann and Sony Corporation of America v Independent Music Publishers and Labels Association (Impala)* [2008] ECR I-04951, para 144. See also Case T-5/02 *Tetra Laval BV v Commission of the European Communities* [2002] ECR II-04381, para 119
[46] Case C-551/10 P *Éditions Odile Jacob SAS v European Commission* [2012] ECR general, Para 66
[47] Consolidated Version of the Treaty on Functioning of the European Union (TFEU) [2012] OJ C326/1, Article 7; EUMR (n31) recital 36; The Court of Justice of the EU applied a balancing methodology between protection of the structure of the market and the public policy objective in Wouters, Case C-309/99 *JCJ Wouters v Algemene*

EU primary law when conducting merger review. Thus, relevant treaty provisions must be stressed. Article 12 TFEU specifically lays down the obligation that Commission has to take into account consumer protection requirements when defining and implementing all Union policies and activities, which is considered as core integration clause.[48] In the same vein, Articles 8 and 38 of Charter of Fundamental Rights (CFR) also emphasis the importance of personal data rights and high consumer protection level respectively.[49] Thus, though Commission chooses a price-centered approach, these provisions do exert constraint on its margin of discretion.

In addition, when a textual interpretation of a provision of EU law does not permit its precise scope to be assessed, the provision in question must be interpreted by reference to its purpose and general structure.[50] Thus, the next part will be focused on the exploration of EU Merger Control's objectives and in which way data concentration impact on 'free side' users is relevant to these objectives.

2.2.2. The objective of EUMR

EU Merger Control, as part of EU Competition Law, the ultimate aim is that through the protection of an undistorted competition market, consumer welfare is increased.[51] Even facing lots of challenges in digital economy era, consumer welfare is still a central pillar for intervention, which could be used to address concentration problems.[52] In other words, the direct objective of maintaining an undistorted competition market[53] is serving for the ultimate aim of consumer welfare which is trying to meet consumers reasonable requirements for competition market, including not only lower price, but also non-price aspects such as innovation, quality, and privacy protection which could lead to a better off situation.[54] The non-

Raad [2002] ECR I-01577; See also European Data Protection Supervisor (EDPS), 'Opinion 8/2016, EDPS Opinion on Coherent Enforcement of Fundamental Rights in the Age of Big Data' (23 September 2016) <https://edps.europa.eu/sites/edp/files/publication/16-09-23_bigdata_opinion_en.pdf> accessed 23 April 2020

[48] ibid (TFEU) Article 12 TFEU

[49] Charter on the Fundamental Rights of the European Union [2012] OJ C326/2

[50] Case C-248/16 *Austria Asphalt GmbH & Co OG v Bundeskartellanwalt* [2017] ECR I-09, para 28. See also joint case C-68/94 and C-30/95 *French Republic and Société commerciale des potasses et de l'azote (SCPA) and Entreprise minière et chimique (EMC) v Commission of the European Communities* [1998] ECR I-01375, para168; Case C-315/14 *Marchon Germany GmbH v Yvonne Karazkiewicz* [2016] ECR I-8, paras 28 - 29

[51] Joined case C-501/6 P *GlaxoSmithKline Services and Others v Commission and Others* [2009] ECR I-9291, para 6; Joined case T-213/01 and T-214/01 *Österreichische Postsparkasse and Bank für Arbeit und Wirtschaft v Commission* [2006] ECR II-1601, para 115.

[52] Ariel Ezrachi, 'EU Competition Law Goals and the Digital Economy' (2018) Oxford Legal Studies Research Paper 17/2018 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3191766> accessed 13April 2020. In this article, the author also mentioned 4 noteworthy points regarding the aim of competition law in digital economy. 1) the concept of consumer welfare can be used to addressed multiply groups of customers; 2) a price-centric approach may not be enough to quantify all the competition effects; 3) the iteration of technologies and changes in business strategies, i.e. tracking services and their effects on the concentration of power and ability to exploit consumers, posed challenges to consumer welfare; 4) the use of big analytic technology in personal data draws attention to the distribution of wealth.

[53] Recital 6 EUMR (n44)

[54] Privacy harms will reduce both comsumer welfare and quality of services and products. See Robert H. Lande, 'The Microsoft-Yahoo Merger: Yes, Privacy Is an Antitrust Concern' (2008) University of Baltimore School of Law Legal Studies Research Paper 06/2008 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1121934> accessed 15 April 2020; and Neil W. Averitt, Robert H. Land and Paul Nihoul, 'Consumer Choice" Is Where We Are All Going - so Let's Go Together' (2011) Concurrences N 2-2011<https://scholarworks.law.ubalt.edu/cgi/viewcontent.cgi?article=1740&context=all_fac> accessed 15 April 2020; And Peter Awire, 'Protecting Consumers: Privacy Matters in Antitrust Analysis' (Center for American Progress, 19 October 2007)

exhaustive nature of consumer welfare has been identified by CJEU where it stated that the parameters for competition and consumer's choice are price, innovation, quality and etc.,[55] as long as they may directly or indirectly impact an undistort competition market and consumer welfare.[56]

As seen from the above CJEU's explanation, the content of consumer welfare is actually not determined by if consumers will consider about it when making their decision. Instead, any harms that arise from competition concerns are expected to be included in the context of EU consumer welfare. Such a broad notion of consumer welfare, on the one hand, provides privacy degradation – the most obvious harm on 'free side' users – the opportunity to be interrupted by competition provisions.[57] It also revealed the inaccuracy of Commission's approach that it will consider privacy only if privacy constitutes the decisive factor of consumers' decision. Furthermore, the standard for approving the existence of consumer harms is relatively low, which only requires that the consumer harm concerned is not purely hypothetical.[58] Thus, a potential or tendency should be accounted as enough to prove the existence of consumer harms.[59] Consequently, the appropriateness of a narrow interpretation on non-price parameters in competition assessment as made by Commission shall be considered under the general scope of EU merger control aims and linked to the low standard of proof requirement.

2.3. Case law evolution of Commission's competition assessment

From a textual interpretation perspective, Commission does have competence in assessing the impact of data concentration on 'free side' users, but it chose a narrow interpretation on non-price parameters within its margin. The following part will be focused on Commission's assessment on a few milestones data-concentrated merger cases to see how it uses its interpretation relating to data concentration concerns.

A. Facebook / WhatsApp

The approach used in this case largely echoed methods in Google's acquisition of DoubleClick which has been confirmed by CJEU in Equifax.[60] During the assessment, Commission's focus was largely put on Facebook's increasing market power in online advertising market and potential harms arising from it to the 'paying side' customers through increased data collection ability.[61] In this decision, it found that even if Facebook has exclusive access to WhatsApp

<https://www.americanprogress.org/issues/economy/news/2007/10/19/3564/protecting-consumers-privacy-matters-in-antitrust-analysis/> accessed 23 April 2020;

[55] Case C-413/06 P *Bertelsmann AG, Sony Corporation of America v Commission of the European Communities Independent Music Publishers and Labels Association (Impala, an international association), Sony BMG Music Entertainment BV* (n32), para 121; Case C-209/10, *'Post Danmark A/S v Konkurrencerådet*' (post Denmark I)[2012] ECR general, para 22; Case C-52/09 *Konkurrensverket mot TeliaSonera Sverige AB* [2011] ECR I-00527, para 43; Case C-413/14 P *Intel Corp. v European Commission* [2017] ECR general, para 134.

[56] Katalin Judit Cseres, '*Competition law and Consumer Protection'* (*The Hague :* Kluwer Law International, 2005) pp 331-332. See also Pinar Akman, 'Consumer' versus 'Customer': The Devil in the Detail' [2010] Journal of Law Society 315

[57] R. Whish and D. Bailey, *'Competition la*w' (7th edn, Oxford University Press, 2012), p19

[58] Case C-23/14 *Post Denmark A/S v Konkurrencerådet* (Post Danmark II) [2015], ECR I-389/4, paras 65 – 66

[59] Case C-549/10 P *Tomra Systems ASA and Others v Commission* [2012] ECR I-general, para 68

[60] Case C-238/05 *Asnef-Equifax v Asociación de Usuarios de Servicios Bancarios (Ausbanc)* [2006] ECR I-11125, para 63. Case C-238/05, Asnef-Equifax v Asociación de Usuarios de Servicios Bancarios (Ausbanc) [2006] ECR I-11125, Opinion of AG Geelhoed, para 56

[61] *Facebook / WhatsApp* (n9) para 164, the Commission recognized that the scope of competition analysis was limited to the likelihood of strengthen Facebook's position in online advertising market.

users' data and using it as an asset for advertising purpose after merger, there are still plenty of valuable datasets that remain available to Facebook's competitors which beyond Facebook's exclusive control.[62] So, there is no anticompetitive effect in online advertising market in this merger. However, regarding the impact of data concentration on 'free side', it excluded it from the assessment by providing that companies are not competing over privacy protection level[63] and it is not the decisive factor for consumers' decision[64].

However, the fact is that merging parties' market share in consumer communication apps market has reached 40% within EEA market followed by a few providers among which a single application's market share is less than 10%.[65] Such a high market share should be a distinct indication for merging parties' future intention or behavior which would happen in a way that harms consumer. However, Commission still followed its narrow interpretation of consumer harm on 'free side' and leave it for data protection authority's intervention.

Finally, two years after the clearance of the merger, it turns out to be that Facebook did start to merge the two databases and targeted more accurate advertisement to WhatsApp users who are also Facebook users. The impact of data concentration is not only limited to Facebook's online advertising service providers, but also WhatsApp users who enjoyed higher privacy protection level before merger. This has called for Commission's investigation and finally ended up by a 110 million euros fine for providing misleading information during merger review.[66] However, though Facebook breached what they have promised, Commission did wrongly analyze the impact of merging two databases in counterfactual test when it noticed Facebook's intention of combining two datasets. Though like this, Commission still insisted that not merging two databases was not the main reason for the unconditional clearance of the merger.[67]

B. Microsoft / LinkedIn

During the two years' interval between the clearance of Facebook's acquisition of WhatsApp and Microsoft's acquisition of LinkedIn, the number of official documents about a regulating digitalization market in European Public Policy area increased dramatically.[68] Oriented by

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[62] ibid paras 121 and 134

[63] ibid Paras 102 & 164

[64] Though according to Commission, by checking if privacy protection is the decisive factor in consumer choice, this approach could avoid the subjective assessment of individual's perception on privacy, the question is not how to access the value of data, rather, it is how to assess the impact of data concentration or privacy protection on consumer's decision in an objective and consistent way. See Mark MacCarthy, 'Can Antitrust Enforcement Improve Privacy Protection? Privacy As a Parameter of Competition in Merger Reviews' [2019] <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3427317> accessed 23 February 2020

[65] *Facebook / WhatsApp* (n9) para 96

[66] Commission press release, Mergers: Commission fines Facebook €110 million for Providing Misleading Information about WhatsApp Takeover (Brussels, 18 May 2017)

[67] Maria C. Wasastjerna (n20)

[68] Commission enacted lots of policies during this two year. For example, Commission, 'Commission proposes high level of privacy rules for all electronic communications and updates data protection rules for EU institutions' (2017) < https://ec.europa.eu/commission/presscorner/detail/en/IP_17_16> accessed 17 February 2020; Subsequently, it published the impact assessment of higher standard digital privacy protection rules which shows that a high level standard protection is necessary needed, (2017) <https://ec.europa.eu/digital-single-market/en/news/proposal-regulation-privacy-and-electronic-communications> accessed 17 February 2020; Even after the introducing of Microsoft decision, Commission has more discussion on the interplay between digitalization and competition assessment, for instance, 'role of digitalization and competition law' (2018) <https://ec.europa.eu/competition/information/digitisation_2018/contributions/digitaleurope.pdf> accessed 17 February 2020; 'The Competition and Markets Authority's (CMA) response to the European Commission's call for contributions on 'Shaping competition policy in the era of digitization'' (2018)

these policies, Commission finally reached to the conclusion that privacy protection constitutes an important parameter in Professional Social Network (PSN) market after assessing seven different relevant markets in Microsoft's merger with LinkedIn, which ruled out its previous claim in Facebook's merger with WhatsApp.[69]

In this assessment, Commission found that by favoring LinkedIn, Microsoft could marginalize the existing competitors through foreclosing PSN market competitors and limit consumers' choices to PSN service providers.[70] In order to address Commission's concern of the foreclosure effect on LinkedIn's competitors in PSN market,[71] Microsoft promised that they will open Outlook Application Program Interface (APIs) and Outlook Add-in Programs for other Professional Social Network (PSN) service providers to guarantee that their independent use of Outlook related programs will not be affected. Most importantly, competing PSN service providers will still be granted access to data stored in Microsoft Cloud.[72] Though those remedies were directly for solving the concerns resulting from conglomerate effects of tying and bundling in 'paying side', it did address the impact of concentration of data on 'free side' users which would turn to be consumer harm of limiting consumer choices in terms of privacy protection level preference.[73] By addressing the foreclosure effect, it will keep the market open and help to allow the companies to compete to protect privacy more effectively, therefore, consumers' privacy consideration is secured.[74]

C. Apple / Shazam

The assessment conducted in this case made a step further on assessing data value. During the assessment, Commission paid a close attention to Apple's control over Shazam's music and user data – commercial sensitive data as identified in this case. Especially, whether Apple could deny competitors access to Shazam's database and use it to identify Apple Music rivals' consumers, and ultimately target them with more accurate advertising or marketing campaigns.[75] Compared to previous sole criterion of only assess if the dataset is unique,

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<https://ec.europa.eu/competition/information/digitisation_2018/contributions/competition_and_markets_authority_cma.pdf> accessed 17 February 2020, and etc.

[69] *Microsoft / LinkedIn* (n3), Commission analyzed 7 different relevant markets, namely PC OSs, Productivity Software, Customer Relationship Management (CRM) Software Solutions, Sales Intelligence Solutions, Online Communication Services, Professional Social Network (PSN) Services, Online Recruitment Services, and Online Advertising Services. See also, paras 351 and 352 where the commission expressed its concerns in PSN market.

[70] *Microsoft/LinkedIn* (n3), Paras 349 and 350. See also complaints brought by its competitor XING that after merger, LinkedIn's 450 million users' data which is unique in professional social network market would all fall within Microsoft exclusive control. Thus, Microsoft would enjoy an unfair competitive advantage by limiting their competitors' access to the unique data which were available to them pre-merger. And this complaint had been accepted by Commission which lead to the requirement of securing competitors' access to certain database. Furthermore, there was also a concern on whether Microsoft's exclusive control over LinkedIn's metadata, with the development of big analytic skill could give rise to an unfair competitive advantage. See Nick Wingfield and Kate Benner, 'How LinkedIn Drove a Wedge Between Microsoft and Salesforce' (*Business in USA*, 6 November 2016) < https://businessesusa.wordpress.com/2016/11/05/how-linkedin-drove-a-wedge-between-microsoft-and-salesforce-by-nick-wingfield-and-katie-benner/> accessed 23 March 2020; Maria C. Wasastjerna (n20)

[71] *Microsoft/LinkedIn* (n3), Para 302, Commission identified 2 key sets of foreclosure effect, "pre-installation of a LinkedIn application on Windows PCs" and "integration of LinkedIn features into Office" and "denial of access to Microsoft APIs".

[72] *Microsoft/LinkedIn* (n3), Para 449.

[73] Kalpana Tyagi, *Promoting Competition in Innovation Through Merger Control in ICT Sector – A Comparative and Interdisciplinary Study* (Springer, Berlin, Heidelberg, 2019) part 17.6

[74] Margrethe Vestager, 'What Competition Can Do – And What It Can't at Chilling Competition Conference' (25 October 2017) <https://ec.europa.eu/commission/commissioners/2019-2024/vestager/announcements/defining-markets-new-age_en> accessed 13 April 2020

[75] *Apple / Shazam* (n8) Para 274

Commission referred to 4Vs (Variety, Velocity, Volume and Value) of data in this case when assessing the value of data as an input.[76]

Firstly, by referring to the variety of data, Commission is expected to find out key data which matters the merger. In this case, Shazam collected both device data, demographic data and music tag data, however, only music tag data which is used to recognize music constitutes the main focus data. Then for analyzing the productivity of music tag data, Commission also looks the velocity of data by calculating the average time that consumers pay on it. But Shazam's music tag data is actually produced significantly lower than other music streaming service providers. Furthermore, low productivity with the small capacity, the volume of Shazam's data is not large.[77] Finally, together with the documentary evidence, Commission found that Shazam's data is not the key to its success which reflects that the value of data is not high.[78] Thus, even if Apple could refuse competitors access to Shazam's music tag data, this will not produce any significant anti-competitive effect.[79]

However, though the market value of Shazam's data was not high, Commission forgot to assess the implication of combining datasets. If Shazam's recognition dataset is combined with Apple's streamline dataset, then it might provide new values and that may constitute the key asset for Apple's success. As such, if Apple refuses competitors access to the new generated data, this may produce anti-competitive effect. In addition, though Commission still left direct consumer harm arising from data concentration open, it did notice the lagging of using market share as the sole criterion for determine market power in 'fast growing sectors that are characterized by frequent market entry and short innovation cycles'.[80] An uncertain market power will be the main risk for subsequent direct consumer harms such as privacy deterioration.

D. Observation

In conclusion, from the above three cases, we could see that Commission gradually notice the importance of data concentration. It has never given up assessing the implication of data concentration when it constitutes an important input. This approach experienced an evolution from '*uniqueness test*' to '*4Vs test*'. However, Commission just ended up analysis at when data constitutes an important input and did not go further to check how such input will impact companies' market power which may harm consumers directly post-merger.[81] Furthermore, regarding the role of privacy in competition assessment, Commission came to different claims in Facebook / WhatsApp and Microsoft / LinkedIn case while using the same approach.[82] However, the framework[83] drawn by Commission regarding when privacy protection falls within the scope of competition law may be problematic in itself. Because the fact that companies do not compete over privacy protection level does not mean that consumers will not be harmed by privacy deterioration. Especially when the merged entities obtain enough market

[76] ibid Para 317
[77] Commission: Competition merger brief no.1/2019, p4
[78] *Apple / Shazam* (n8) Para 324
[79] ibid paras 318-330
[80] ibid para 162
[81] Nicolo Zingales, 'Apple/Shazam: Data Is Power, But Not A Problem Here' (2018) competition policy international <https://dev.competitionpolicyinternational.com/wp-content/uploads/2018/12/EU-News-Column-December-2018-Full.pdf > accessed 28 March 2020
[82] *Microsoft / LinkedIn* (n3), footnotes 330. The Commission stated that the framework and standard for assessing privacy as a parameter in Microsoft case is consistent with its previous approach in Facebook / WhatsApp case which is that privacy forms a factor that will affect consumers choice and companies are competing over it.
[83] *Facebook/WhatsApp* (n9) Para 102, the Commission also made clear that the main competition point of the application is based on their functions and underlying networks.

power which could be leveraged to the detriment of both competition and consumer welfare as seen from Facebook's abuse of dominant position after the unconditional merger. Merger Control as the preventive measure for potential abusing dominant position, the assessment must be cautious where the market power is significantly increased, and this market power may ultimately be used in a way that consumers would be deprived from certain benefits.[84]

2.4. Challenges in measuring the impact of data concentration

Regardless of turnover limitation[85] and the delimitation of relevant market concerns,[86] this part will focus only on challenges in measuring data concentration impact as a harm in competition assessment. Comparing to the mature approach in assessing data as an input by referring to 4Vs, the impact of data concentration on market power and free-side consumers remains uncertain.

2.4.1. The impact of data concentration on market power

The selection of certain criteria used to measure market power is not fixed, and it could be chosen according to different characters of the market.[87] Traditionally, when conduct *'SIEC test'*, Commission tends to measure market power through the lens of market share and other easily quantifiable factors. In digital era, though the value of data is quantifiable to some extent, the '*4Vs test*' limits the analysis of data to a very narrow context.[88] However, company could increase its market power relying on all kinds of data, regardless of whether it is the key to others' success and whether others provide such data. Furthermore, a large market share in

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[84] Guidelines on the Assessment of Horizontal Mergers under the Council Regulation on the Control of Concentrations between Undertakings [2004] OJ C 031/5, para 8

[85] The current purely turnover-based approach has been criticized a lot and member states of German and Austria have tried to adopt a valued based approach. See, Austrian and German competition authorities' joint guidance paper on new valued based threshold: 'Guidance on Transaction Value Thresholds for Mandatory Pre-merger Notification (Section 35 (1a) GWB and Section 9 (4) KartG)' [2018] < https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Leitfaden/Leitfaden_Transaktionsschwelle.pdf?__blob=publicationFile&v=2 >, accessed 28 April 2020, Section C; But some people has also pointed out that the current working system between EU and member states relying on articles 4.5 and 22 EUMR is sufficient to ensure the effectiveness of EU merger control to catch cases which impact undistorted internal market. See Stephen Whitfield, Richard J. Brown and Ingrid Rogers, 'the Impact of Data on EU Merger Control' [2019] Competition Law Journal 151. To the sone effect, Commissioner Vestager has also expressed that the current referral system has allowed the Commission to assess the important mergers that didn't reach EU threshold. And finally, no matter what system is chosen, the most fundamental principle – it should be clear on whether a merger should be notified – has to be respected. See Margrethe Vestager, Refining the EU merger control system, Studienvereinigung Kartellrecht (10 March 2016) <https://wayback.archive-it.org/12090/20191129204644/https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/refining-eu-merger-control-system_en > accessed 17 April 2020.

[86] The delimitation of relevant market seems to be not a big problem as Commission did not object to identify data as a separate market. See *Thomson Corporation / Reuters Group* (Case COMP/M.4726) Commission decision of 19/02/2008 [2008] OJ L C212/5, IV.B.3 where Commission established a separate market for data. See also Microsoft's merger with LinkedIn where Commission identify a hypothetical market of data for advertising and a market of data for machine learning in CRM market (n3).

[87] The criteria to be used to measure the market share of the undertaking(s) concerned will depend on the characteristics of the relevant market. See Commission Guidelines on Market Analysis and the Assessment of Significant Market Power Under the Community Regulatory Framework for Electronic Communications Networks and Services [2002] OJ C 165/6; Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on A Common Regulatory Framework for Electronic Communications Networks and Services (Framework Directive) [2002] OJ L 108/33

[88] The first step of 4Vs test is Variety test which is used to delimitate the key data for companies' success to the extent that it could be used as an input.

online advertising market may indicate that the company has already collected enough data. If Commission ignore the impact of market power on 'free side' users, it might also overlook merging parties' intention and ability to leverage their competitive advantage to the detriment of consumers. Most importantly, privacy protection deterioration constitutes one of the main concerns for companies' abusive conducts in online service market. Thus, factors which may significantly increase market power must be taken into account to both sides of the market.

Followed by privacy protection concern, the main challenge presented before Commission is that there are no consistent theories of harm. Though it is clear that privacy harm mainly results from powerful companies' abusive conducts, it is still hard for Commission to get to a consolidated analysis of the impact of data concentration on free-side consumers without a quantifiable and identifiable framework. Thus, the problem is not that Commission is unwilling to take privacy into account, but how can it consider the harm in an appropriate and balancing way.

So far, it only goes to the extent that when companies compete over privacy protection level. However, if Commission just takes a negative attitude and passively relies on company's self-choice of whether they are competing over privacy protection, it would be impossible for companies to be motivated to explore consumer welfare relating to privacy protection. Instead, it may lead to a 'race to bottom' situation because companies face little constraints from both competition authorities, competitors, and customers.[89] Therefore, if companies are compelled to present the value of personal information they collected and Commission emphases on it during competition analysis, firms may be encouraged to seek competitive advantages over privacy protection level.

2.4.2. The interplay with data protection rules

One of the reasons why Commission takes a negative attitude on privacy degradation is that its competition assessment is always conducted by stating that "the assessment is conducted without prejudice to data protection rules". However, by simply stating that privacy protection issue falls within or outside the scope of competition assessment, it fails to clarify the interaction between competition assessment with data protection law.[90] Especially, in double sided market, consumers not only play the role of data subjects, but also buyers of services and products. As for buyer, competition authority is obliged to protect them from any anti-competitive conducts. Apart from this, Commission ignores the fact that there is a gap between data protection and competition law. If both segments leave it, then companies might be encouraged to take advantage of the loophole and exploit consumers adversely.

[89] Discussions on 'race to bottom' see Allen P. Grunes, 'Another Look at Privacy' [2013] Geo. Mason Law Review 1107; Pamela Jones Harbour and Tara Isa Koslov, 'Section 2 in a Web 2.0 World: An Expanded Vision of Relevant Product Market [2010] Antitrust Law Journal 769; Carl Shapiro, 'Protecting Competition in the American Economy: Merger Control, Tech Titans, Labor Markets' (2019) Journal of Economic Perspectives, Forthcoming <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3405501> accessed 28 April 2020; Furthermore, the consideration of the impact of data privacy on consumers' privacy may be compared to the previous discussion on the integration of environmental protection into competition law. Finally, the integration of competition law was transferred as corporate environmental responsibility and now companies are competing over it. Some companies even make the promotion of their eco / green products as one of their business strategies. However, this is not that companies compete over it first, instead, it is authority who promote and emphasis it first, then companies are gradually notice the importance of it and make it better for consumers. See Case T-210/01 *General Electric Company v Commission of the European Communities* [2005] ECR II-05575, para 549-551

[90] Maria C. Wasastjerna (n20)

Considering privacy harm under competition law area is mainly because this harm is arisen from companies' increasing market power and anti-competitive conducts. Generally, the lowering of privacy protection level and more accurate advertisements are allowed under data protection law. However, under such situation, if competition authority does not intervene these during merger control, these concerns might affect consumers a lot. Especially for those who have higher privacy protection preference, their choices would be limited. Though the emphasis is made on competition law, data protection and competition law cannot stand alone. Commission has to consider how to bridge the two segments and make use of data protection law to improve their competition assessment and enforcement.

In conclusion, for Commission to better conduct merger control which involves big data transaction, there must be a workable framework for including impact of data concentration on free-side and a remedy system which can complement for data concentration shortcomings where the merger does not necessarily lead to a prohibition decision.

3. Theories of Harm Related to Data Concentration

The connection between negative effects on competition and harm to consumers has been stressed a lot as a way of integrating relevant consumer harms into competition assessment since mid-1980s EU competition law evolution.[91] In addition, under EU competition law context, the terminology of consumer harm often refers to both customer (intermediate level) and consumer (end user),[92] thus this part will be divided into two parts respectively on the analysis of harm on customers when personal data constitutes an asset for business development and consumers who use personal data as a proxy for free services.

3.1. Data as an asset

The nature of data as a peculiar asset for companies' development has been recognized in several occasions. It has also been noticed that the concentration of data could increase merging parties' market power which may be leveraged to the advantage of themselves, while harms consumers and competitive markets post-merger.[93] In this process, data density has been identified as one of the major sources for developing competitive advantage.[94] By merging companies who hold the data that the acquirer does not necessarily have will help them to reach superior data density position. Based on this, Commission normally focusses on assessing the competitiveness of data by referring to '4Vs test' to evaluate the potential impact of data concentration.[95] If there are alternative data resources or the acquired datasets are not competitive, then the merger is considered as unlikely to raise anti-competitive effects.

3.1.1. Barriers to entry

For barriers to entry, there is little constraint exercised by regulatory authorities, and the concerns mainly arise from technology difficulties and strong market players' abusive conducts.[96] By making entry and expansion harder, it could strengthen strong market

[91] Case C-8/08 *T-Mobile Netherlands and Others v Raad van bestuur van de Nederlandse Mededingingsautoriteit* [2009] ECR I-04529, para 38; Case T-461/07 *Visa Europe and Visa International Service v European Commission* [2011] ECR II-01729, para 126. See also Communication from the Commission — Guidelines on the Commission's Enforcement Priorities in Applying Article 82 of the EC Treaty to Abusive Exclusionary Conduct by Dominant Undertakings [2009] OJ C45/7

[92] Communication from the Commission Notice Guidelines on the Application of Article 81(3) of the Treaty [2004] OJ C101/97, para 84. In this guideline, Commission made it clear that the term of consumer encompasses from intermediate to end level and both individuals and entities. See also ibid Commission Guidelines on the Application of Article 82 EC Treaty, para 19

[93] Merging parties are capable of transform their data advantage to competitive advantage through big analytic skills. Take data-based companies such as Google and Facebook for example, they could transform the large amounts of data they gathered into competitive advantage through the analyzing of users' behaviors according to their searching and browsing history.

[94] Data density was calculated by the rate of collection vs. the rate of decay. Through merger activities, the rate of collection will be larger as it automatically gains another set of data from the merged entity. See Steve Strongin, Amanda Hindlian, Sandra Lawson and Sonya Banerjee, 'The Competitive Value of Data' (*Goldman Sachs, Global Markets Institute*, 10 May 2019) <https://www.goldmansachs.com/insights/pages/reports/the-competitive-value-of-data/report.pdf>, accessed 5 May 2020

[95] As early as in Google's acquisition of DoubleClick in 2008, Commission has noted that though DoubleClick's data might be valuable, but it certainly was not unique. So, by combining the DoubleClick's datasets, Google did not prevent any competitors from compositing. Also, Commissioner Vestager has expressed that the impact of data concentration is not that one holds lots of data, it is post-merger, if anyone can still duplicate this kind of data in a comparable condition as pre-merger. After 2018 Apple / Shazam, Commission introduced 4Vs test which has similar role as 'uniqueness' test in competition assessment of merger control.

[96] Horizontal Merger Guidelines (n84) para 71.c

incumbents market power as they are in a bargaining advantage position. Due to this, it becomes increasingly hard for new entries to attract large volume of users as the main factor for people to choose social network application is mainly determined by underlined network and trust.[97] Thus, the motivation for potential competitors to enter the market is deterred though they may provide better products or services. In turn, consumers are harmed indirectly by losing a competitive provider.

Barriers to entry and expansion is more significant when consumers only choose to use one service in the market instead of multi-homing services. Because as seller, when there are only limited registered users, the new entries cannot gain enough information from consumers which could be sold to advertisers or other paying activities.[98] Consequently, the new entries are covertly foreclosed, and small incumbents are marginalized. Furthermore, foreclosure effect on competitors also exists when successful incumbents target their customers with different prices through algorithm, while competitors does not have access to the targeting database. Because new entries and small competitors may not have sufficient market power to conduct big analytics to separate customers into different groups. Crucially, they may also interrupt the selling of core data resources to its competitors to secure their competitive advantage. Specifically, when the data is valuable and there is not that much substitutes, the strong market player could easily increase the price and limit the variety of data sold to their intermediate customers to keep their competitive advantage over its rivals.[99] Competitors are harmed by increasing market power in the sense that companies is likely to exploit 'economies of aggregation', and use aggregated data-concentration effect to create barriers to entry as these datasets are completely under its exclusive control post-merger.[100] This foreclosure effect, once produced, is predicted to be irreversible as the market forces are not sufficient enough to self-correct a market failure due to the strong "winner takes all"[101] effect.[102]

Barriers to entry is not only shown in the circumstance that company holds strong market power in acquiring market, but also exists when companies are active in different markets simultaneously. For example, Google is active in markets such as web searching, digital maps,

[97] Apart from network effects, reputation, trust and brand recognition also play important role when consumers choose online service providers. However, the existing main incumbent must have established their popularity among people through years' development, while it may be not easy for new entries and small operators to reach such economy of scale and scope in short time. See Thomas Ridley-Siegert, 'Data Privacy: What the consumer really thinks' [2015] 17 Journal of Direct, Data and Digital Marketing Practice 30. Trust is listed as the top three factors that affect consumers' decision according to the investigation in this article.

[98] Competition and Markets Authority (CMA), 'The Commercial Use of Consumer Data: Report on the CMA's call for information' (June 2015) p 86

[99] *KME / MKM Wieland / Aurubis* (Case COMP/M.8909) Commission Decision C(2018)8497 final [2018] OJ C201/1. Commission prohibited the merger due to the concerns of input supply as there are only three operators in the market. After merger, there will only exist two competitors, it is easy for them raise the cost for downstream customers.

[100] 2014 EDPS Preliminary opinion (n5) pp 30-31. For discussion on the term of economies of aggregation see Case T-201/04 *Microsoft Corp. v Commission of the European Communities* [2007] ECR II-03601; Commission Guidelines on the Application of Article 82 EC Treaty (n78) Para 87. See also Yannis Bakos and Erik Brynjolfsson, 'Bundling and Competition on the Internet' [2000] Marketing Science 63; OECD Hearings on the Digital Economy (2012) <http://www.oecd.org/daf/competition/The-Digital-Economy-2012.pdf> accessed 20 April 2020

[101] "Winner takes all" situation is created by the peculiar characteristics in multisided market, such as network effects, externalities and economy of scale and scope. See David S. Evans, 'Competition and Regulatory Policy for Multi-Sided Platforms with Applications to the Web Economy' [2008] Concurrences <https://papers.ssrn.com/sol3/results.cfm> accessed 6 May 2020

[102] OECD, 'Barriers to Entry' (2005) < https://www.oecd.org/daf/competition/cartels/36344429.pdf> accessed 20 May 2020

cloud service et cetera at the same time. Under such situation, it would be easier for them to achieve economies of scale and scope through merging with smaller start-ups and linking this merging activity with their other strong activity. For multi-services providers, they may not be dominant in the acquiring market which is normally just a complementary service for their industry. However, due to the strong network externalities, it is not hard for them to leverage their dominant capacity in other market to foreclose competitors in the acquiring market.[103] For example, in Microsoft / LinkedIn merger, Microsoft could easily foreclose LinkedIn's competitors in professional social network market through tying and bundling due to its large market power in Microsoft Office Suites market. Thus, it would be hard for LinkedIn's competitors to survive in Microsoft's Operating and Office system which the market share is [90 – 100%] high worldwide.[104] However, if entry and expansion are easy, it is not hard to see why merging parties will not be constrained by competitors and a little degradation of privacy would not be soon remedied by future entries in a competitive market.[105]

3.1.2. Limit customers' choices

The limitation on consumers choice is partly associated with barriers to entry. Because consumers choices could be limited by either the loss of existing or potential competitors or companies' exploitative actions such as integration of the bought services into acquirer's existed service by multi-services providers. Thus, merger decisions have to make sure that consumers could make real choices.[106]

A. Loss of providers

A wide range of selection constitutes an important parameter for both a competitive market and consumer welfare.[107] Consumers also make their decisions based on the availability of providers. For consumers, one of the direct effects of merger is the elimination of a provider who may be a powerful competitor to the acquirer. In this regard, Commission must make sure that merger will not lead to the elimination of substantial alternative choices which may meet some consumers' choices.

In online social networking market, the reason why lots of Facebook users choose to use WhatsApp is that they provide better privacy protection service,[108] and the consumers are willing to pay premium fees for stronger privacy protection according to Commission's investigation in merger review.[109] However, Commission dismissed this evidence and excluded the preference of higher privacy protection from the scope of assessment by stating that the main driving force in making decision was the functionality of application. Furthermore, in Microsoft's merger with LinkedIn, Commission did consider the limiting of

[103] *IMS Health / Cegedim Business* (Case COMP/M.7337) Commission Decision of 19 December 2014 C(2014) 10252 final OJ C396/30. See also *Microsoft / LinkedIn* (n3); See also Commission Guidelines on the Application of Article 82 EC Treaty (n91)
[104] *Microsoft / LinkedIn* (n3), table 6, p 63
[105] Margrethe Vestager, Protecting Consumers form Exploitation (Brussels, 21 November 2016) <https://wayback.archive-it.org/12090/20191129221154/https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/protecting-consumers-exploitation_en> accessed 15 April 2020
[106] Margrethe Vestager, Competition is a Consumer Issue (BEUC General Assembly, 13 May 2016) < https://wayback.archive-it.org/12090/20191129205633/https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/competition-consumer-issue_en> accessed 17 April 2020
[107] Horizontal merger guidelines (n84) Para 8
[108] Maurice E. Stucke and Allen Grunes, *big data and competition law* (Oxford University Press, 2016)132.
[109] Janice Y. Tsai, Serge Egelman and Lorrie Cranor, 'The Effect of Online Privacy Information on Purchasing Behavior: An Experimental Study'(2011) 22 Information System Research 254

consumers choice in professional social network service.[110] But this concern was addressed through tying and bundling concern, which means that it is still uncertain if Commission will consider range of consumers' choices if there is no traditional anti-competitive effect from the 'paying side'. Nonetheless, with more competitors in the market, companies have to strive to survive and thus they will try to improve themselves in any aspects as they can, including privacy protection level as long as consumers could exert constraint on them.

Most importantly, due to the establishment of different network or enjoying different features provided by another service provider, consumers may use more than one application at the same time for the same function. For example, people may use Facebook Messenger and WhatsApp or WeChat at the same time to meet their requirements. However, the loss of alternative providers hurts consumers' multi-homing service choices which they had and valued pre-merger.[111] For ensuring consumers' right in this kind of multi-homing choices, it is important to make sure that dominant companies do not exercise its strong power to make this kind of choices harder through technologies such as illegal fidelity rebates, tying and bundling or ranking algorism and recommendation system on consumer side.[112]

Countervailing buyer power which only ensures a particular type of customers cannot be regarded as adequate to offset potential anticompetitive effects arising from the merger.[113] From this point, though Commission may limit the delimitation of relevant market on the 'paying side', it cannot be ignored that 'free-side' users also count as part of its customer and the considerations only put on 'paying side' cannot be seen as sufficient to address 'free side' users' concerns.[114]

B. Loss of choice-making space

Another important factor that needs to be taken into account is the cost and difficulties for consumers to switch to another provider's service or product, though the market might have enough providers.[115]

In online communication market, the underlying network as the most decisive factor implies that consumers will make their choices based on most people's choices which formulate their underlying network. Crucially, once the application is chosen and the network is established, then the switching cost and significance will deter lots of consumers from doing this. After all, the main purpose of using communication application is for communication. This can be seen from Facebook's merger with WhatsApp who are the two largest messaging service providers worldwide.[116] With such a strong market position post-merger, merging parties are likely to impose unfair contractual terms on users that allow them to track or use the data for other

[110] *Microsoft / LinkedIn* (n3)
[111] Mark MacCarthy (n64)
[112] Jacques Crémer, Yves-Alexandre de Montjoye and Heike Schweitzer, 'Competition Policy for the Digital Era', (European Commission, 2019) p 57
[113] Horizontal merger guidelines (n84) para 67, see also *SCA / METSÄ Tissue* (Case COMP/M.2097) Commission Decision 2002/156/EC [2001] OJ L57, para 88. Price discrimination between different categories of customers may be relevant in some cases in the context of market definition; Commission notice on the definition of relevant market, para 43
[114] Howard A. Shelanski, 'Information, Innovation, and Competition Policy for the Internet' (2013) 161 University of Pennsylvania Law Review 1663, p 1688
[115] *SCA / METSÄ Tissue* (n113) paras 72-73
[116] Birgit Bucher, 'WhatsApp, WeChat and Facebook Messenger Apps – Global Messenger Usage, Penetration and Statistics' (*Messenger People*, February 12, 2020) <https://www.messengerpeople.com/global-messenger-usage-statistics/> accessed 23 April 2020

purposes.[117] Then consumers accept the privacy terms in a passive way which they would not accept in another situation. This cannot be seen as a truly consenting.[118] Comparing to companies' ability to change their policies, it is harder for consumers to switch. This is not only because of the switching difficulty, but also their low perception on the change of privacy policies. Thus, Commission needs to make sure that consumers are truly willing to disclose their personal information and the free service is a fair return for them where consumers are incapable of doing this.

Another example for illustrating consumers choice-making space is seen from company's intention of integrating their different services. For example, in Microsoft's merger with LinkedIn, if Microsoft pre-installed LinkedIn service into its Microsoft service, taking into account that LinkedIn is a dominant operator in professional social networking market, then consumers would even more reluctant to install other professional social network applications. This is not only because of popularity of LinkedIn, but also it is hard to remove pre-installed application from device. If install another one, the storage space would be occupied by two similar applications which would slow down computer's operation speed. Thus, a consumer harm is raised as consumers cannot make genuine decisions due to companies tying and bundling.

In conclusion, EU competition policy's ultimate aim is protecting and benefiting consumers.[119] CJEU has iterated a lot in its judgements that competition polies are not only for addressing direct consumer harms, but also those which indirectly cause detriment result to consumer through their impact on an effective competition structure.[120] Thus, Commission has to make sure the consumer welfare is not harmed during merging activity.

3.2. Data as a proxy for free services

"Free" is a deceptive term in digital economy because it gives consumers an illusion that they paid nothing, but the truth is that consumers are even not aware of what have they paid completely.[121] Consumers give their personal information to service provider as an exchange of free service or product, in this process, the protection on consumers personal privacy afforded by company constitutes an important part of consumer welfare. However, there is still no consistency with regards to theories of harm on the protection of consumer welfare which directly arise from companies' predatory conducts. Even when using the term of quality, Commission is very cautious.[122] But for safeguarding consumer's digital privacy welfare in

[117] Bundeskartellamt (n11)
[118] Maria C. Wasastjerna (n20)
[119] Joined Cases C-468/06 to 478/06 *Sot. Lélos kai Sia EE and Others v GlaxoSmithKline AEVE Farmakeftikon Proionton, formerly Glaxowellcome AEVE* [2008] ECR I-07139, para 68; Case C-209/10 *Post Danmark I (n55)* para 44; Case C-23/14 *Post Danmark A/S v Konkurrencerådet* (Post Danmark II) (n58) para 69; Joined Cases T-213/01 and T-214/01 *Österreichische Postsparkasse AG and Bank für Arbeit und Wirtschaft AG v Commission of the European Communitie* (n51) para 115
[120] Case T-286/09 *Intel v Commission* [2014] ECR II-245/8, para 105; Case C-209/10, Post Danmark I (n55) para 20; Case C-280/08 P *Deutsche Telekom AG v European Commission, Vodafone D2 GmbH, formerly Vodafone AG & Co. KG, formerly Arcor AG & Co. KG and Others* [2010] ECR II-346/4, para 182
[121] David Adam Friedman, 'Free Offers: A New Look' (2008) 38 New Mexico Law Review 49, pp 68-69. See also Chris Jay Hoofnagle and Jan Whittington, 'Free: Accounting for the Costs of the Internet's Most Popular Price' (2014) 61 UCLA Law Review 606
[122] The case that refers privacy as an aspect of quality is *Microsoft / LinkedIn* (n3) para 389. In this case, Commission stated that privacy is relevant only to the extent that consumers see it as a significant factor of quality. But this statement was in contrasted with the opinion of seeing privacy as a subjective term and trying to quantify it in an objective way. Regarding this, some people even propose for a SSNDQ test as a complementary part of

competition assessment under merger control, it is necessary to identify the link between company's anti-competitive effect and consumer harms arising from it.

3.2.1. Digital privacy as non-monetary price

Personal data has long been recognized as the non-monetary price of the internet,[123] and in reality, it does the price that consumers pay for free services and products on the 'free side' of multisided market.[124] Especially, the original registration information given to companies works like a pawn for the free services because consumers enjoy the right of data portability and et cetera data subject's rights.[125] Companies have the duty to protect it. Once registered, the price paid by consumers is not only original personal information, but also those that they allow companies to track their daily activities and analyzing the data generated according to their activities. Due to this, the protection of privacy becomes increasingly important for consumers in information asymmetry market.

Considering personal data as currency in digital era is originated from the economic concept of 'privacy calculus'.[126] This model assumes that consumers enjoy the consideration of disclosing personal information when engaged in using the free services and products.[127]

SSNIP test, see SSNDQ test are proposed from: for instance: in Commission Report on Competition Policy for Digital Era, Jacques Crémer, Yves-Alexandre de Montjoye and Heike Schweitzer (n112) p 45; OECD: The Role and Measurement of Quality in Competition Analysis (2013), pp 163-164; and it has been applied to Commission's investigation in Google Android dominant position, *Google Android* (case AT.40099) Commission decision C(2018) 4716 final

[123] Prior to 2006, data scientist Clive Humby has said that *"data is the new oil"*, and for it works valuably, it must be refined and analyzed. See Charles Author, 'Tech giants may be huge, but nothing matches big data' (*The Guardian*, 23 August 2013) < https://www.theguardian.com/technology/2013/aug/23/tech-giants-data > accessed 7 May 2020. Followed by this argument, Natarajan Chandrasekaran had analyzed that the reason why data could be treated as currency in digital era. That is because data is generated quicker and richer, in the meantime, consumers have higher expectation on services and the development of technology could meet their expectation. See Natarajan Chandrasekaran, 'Is data the new currency?' (*World Economic Forcum*, 14 August 2015) < https://www.weforum.org/agenda/2015/08/is-data-the-new-currency/ > accessed 7 May 2020. In 2012, European Commission also recognized " personal data is the currency in digital market". See Viviane Reding 'The EU Data Protection Reform 2012: Making Europe the Standard Setter for Modern Data Protection Rules in the Digital Age' (*Innovation Conference Digital, Life, Design Munich*, 22 January 2012) < https://ec.europa.eu/commission/presscorner/detail/en/SPEECH_12_26 > accessed 7 May 2020. See also Commission press release where Commission claimed that consumers pay for Google's search service with their data, 'Antitrust: Commission fines Google €2.42 billion for abusing dominance as search engine by giving illegal advantage to own comparison shopping service' (*Brussels*, 27 June 2017) < https://ec.europa.eu/commission/presscorner/detail/en/IP_17_1784> accessed 7 May 2020; Commissioner Vestager, 'Competition in a big data world'(*Munich* 18 January 2016) <https://wayback.archive-it.org/12090/20191129204049/https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/competition-big-data-world_en> accessed 7 May 2020

[124] Michal Gal and Daniel L. Rubinfeld, 'The Hidden Costs of Free Goods: Implications for Antitrust Enforcement' (2016) 80 Antitrust Law Journal / UC Berkeley Public Law Research Paper No.2529425 / NYU Law and Economics Research Paper No. 14-44 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2529425> accessed 27 April 2020. See also Allen P. Grunes and Maurice E Stucke, 'No Mistake About It: The Important Role of Antitrust in the Era of Big Data' (2015) Antitrust Source, Online / University of Tennessee Legal Studies Research Paper No. 269 < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2600051> accessed 28 April 2020

[125] Especially under GDRP, users enjoy the right of forgotten, deleting and portable, which means that individual still remains certain level of ownership of the data. Companies during this process have responsibility to keep consumers' personal information safe.

[126] Tamara Dinev and Hart Paul, 'An Extended Privacy Calculus Model for E-Commerce Transactions' (2006) 17 Information Systems Research 61

[127] Il-Horn Hann, Kai-Lung Hui, Sang-Yong Tom Lee & Ivan P.L. Png, 'Overcoming Online Information Privacy Concerns: An Information-Processing Theory Approach' (2007) 24 Journal of Management Information Systems 13. See also Il-Horn Hann, Kai-Lung Hui, Sang-Yong Tom Lee & Ivan P.L. Png, 'Online Information Privacy:

Accordingly, it makes sense to measure the quantity and variety of personal data to be provided and handled for enjoying free services and products.[128] Because this could imply the price of service and goods. Thus, a decrease in privacy protection level is tantamount to an increase in price as companies are either asking for more personal information disclosure or using them for more purposes, such as more advertisements and investments where they can gain more profits.[129] However, it is not easy to measure the value of protection of personal information as non-price parameter.[130] As there is no real price, the traditional SSNIP test (small but significant non-transitory increase in price) will not work. Therefore, for measuring the market price of personal data, though the market price of personal data is not affected by demand and supply chain due to its "non-rival" and "non-subtractable" feature,[131] it still has to be understood through its price at competitive markets. Considering this, an indication of price increasing could be implied from a more accurate and frequent advertisements imposed by companies. Because accepting advertisement is one of the provisions in privacy policy and one of the ways that companies use to make profits.

In this regard, Commission has to pay a close attention to the measurement of privacy values. Values of privacy are not precise and stable all the time as they only represent for a single period of time in which they are used or sold instead of the whole lifetime of data based on its reusable and changeable features.[132] Furthermore, in the assessment of the impact of Microsoft and LinkedIn in professional social networking market, instead of assessing the reduction in privacy, the Commission went to foreclose effect on LinkedIn's competitors who provide better service protection. This indirectly addressed the concerns of privacy protection level. In the same line, German competition authority has already articulated the direct consumer harm

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Measuring the Cost-Benefit Trade-Off' [2002] International Conference of Information Systems Proceedings; Joseph E Phelps, Giles D'Souza and Glen J Nowak, 'Antecedents and Consequences of Consumer Privacy Concerns: An Empirical Investigation' (2001) 15 Journal of Interactive Marketing 2

[128] Pamela J Harbour, 'Concurring Statement of Commissioner Pamela Jones Harbour, FTC Staff Report: Self-Regulatory Principles for Online Behavioral Advertising' (2009) < https://www.ftc.gov/sites/default/files/documents/public_statements/concurring-statement-commissioner-pamela-jones-harbour-ftc-staff-report-self-regulatory-principles/p085400behavadharbour.pdf > accessed 25 May 2020; See also Peter Swire, 'Protecting Consumers: Privacy Matters in Antirust Analysis' (*Center for American Progress*, 19 October 2007) < https://www.americanprogress.org/issues/economy/news/2007/10/19/3564/protecting-consumers-privacy-matters-in-antitrust-analysis/> accessed 13 May 2020; Robert H. Lande, 'The Microsoft-Yahoo Merger: Yes, Privacy Is an Antitrust Concern' [2008] University of Baltimore School of Law Legal Studies Research Paper No. 2008-06 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1121934> accessed 22 May 2020; Jan Whittington and Chris J Hoofnagle, 'Unpacking Privacy's Price' (2012) 90 North Carolina Law Review 1327

[129] Allen P Grunes and M. E tucke, 'No Mistake About It: The Important Role of Antitrust in the Era of Big Data' (2015) < https://pdfs.semanticscholar.org/e867/9a20c3d5f316fdfdaf4b94d43390b4c5dd71.pdf?_ga=2.8533941.1055769763.1590141586-1412636197.1590141586 > accessed 15 May 2020; Stucke, Maurice E. and Ariel Ezrachi, 'When Competition Fails to Optimise Quality: A Look at Search Engines' [2015] University of Tennessee Legal Studies Research Paper No. 268, 36

[130] Apart from there is no other real price for measurement, another reason is that personal information is used differently in different occasions and at different price.

[131] See in particular OECD, 'Exploring the Economics of Personal Data: A Survey of Methodologies for Measuring Monetary Value'[2013] OECD Digital Economy Papers No.220, 7

[132] The same data can be sold to different groups of people for different uses at different prices. For example, in terms of changeable, according to a report made by Investopedia in 2019, personal data such as marriage status, age, gender…and online searches on Facebook normally worth $ 0.2-0.8 each, however, taking marriage status as an example, if it changed, then the value of it will increase around $ 0.3, How Much Is Your Personal Data Worth to Facebook? Matthew Johnston, 'How Facebook Makes Money' (*Investopedia*, 12 January 2020) <https://www.investopedia.com/tech/how-much-can-facebook-potentially-make-selling-your-data/> accessed 12 May 2020; in terms of reusable, generally, the same personal data can be sold to different people and probably at different prices. See, OECD, 'Exploring the Economics of Personal Data' (n131), p 25-27

in its Facebook's abuse of dominant position investigation where it concluded that the transparency and fairness of service policy was important to competition.[133] Without affordable and compatible access to free-service, competition in free-side might be distorted. So, there is no room for mergers that raise prices for users, even by increasing non-monetary price.[134]

3.2.2. Digital privacy protection as quality

A. Scope of quality

Though the scope of quality shares some similarities among consumers,[135] it is still hard to define because of the multidimensional and subjective nature.[136] Though lacking an exact definition to quality, Commission has invoked quality broadly as a consideration in several of its merger assessments. In Dow Chemical's acquisition of Dupont, the defined relevant market is just crop production industry. However, Commission not only assessed concentration effect on innovation of crop production industry,[137] but also gave a focus on the impact of concentration to food safety and security which was a crucial part of quality.[138] Obviously, in this case, Commission extends the scope of quality beyond the main service itself in the defined market. Along with similar logic in this case, for data concentrated mergers, the assessment of service or product quality should not be limited solely to the product or service itself, but it should account for a larger scope as long as the factor is an indispensable part for using the service or product.[139]

Furthermore, in Microsoft's acquisition of Yahoo! Search business, the Commission identified the searching experience as the main part of quality, and it examined whether the merger would reduce the quality of searches.[140] As a user, searching experience contains not only about how quick and rich the content could be, but also about how it is delivered and presented. For example, if users are unwilling to give up their privacy to targeted advertisement, it could be

[133] Bundeskartellamt (n11)

[134] Margrethe Vestager, 'Competition and the Digital Single Market' (15 September 2016) < https://wayback.archive-it.org/12090/20191129213335/https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/competition-and-digital-single-market_en > accessed 17 April 2020

[135] In OECD quality assessment guidelines, it listed some common recognized components of quality, such as materials, reliability, location, aesthetics, performance and et cetera. For detail see OECD, The Role and Measurement of Quality in Competition Analysis (n122) p 12

[136] The measurement of quality varies from consumer to consumer regarding same product or service at any price. Even across the union, there is no consistency. Even if consumers are consistent in what compose the quality they want, the ranking of the importance of each factor might be different. For detail see OECD, The Role and Measurement of Quality in Competition Analysis (n122) p11

[137] *Dow / DuPont* (Case M.7932) Commission Decision C(2017) 1946 final [2017] OJ C 353/9, paras 277-279, 284 – 302, 342 – 352, and Annex IV

[138] ibid Dow / Dupont, paras 1976 – 1980

[139] Though some people have argued that privacy protection level cannot constitute a competition parameter because there are residual provisions in GDPR which guarantee users privacy protection, but the problem is that GDPR cannot catch competition problems as clearly seen from Facebook's merger with LinkedIn where after merger, the privacy protection level is degraded, but it still complies with GDPR. Under such situation, Consumers who value more about privacy is derived from choosing better quality product. See also EDPS, Preliminary Opinion, 'Privacy and Competitiveness in the Age of Big Data: The Interplay between Data Protection, Competition Law and Consumer Protection in the Digital Economy' (n12) where it was suggested that as a broad notion, the concept of quality should include privacy.

[140] It finally found that Microsoft will not have the incentive to deteriorate searching quality as facing the large constraint from its competitor Google who owns 80% market share in internet searching market. See *Microsoft/ Yahoo! Search Business* (Case COMP/M.5727) Commission Decision C(2010) 1077 [2010], paras 214 – 226

said that they may not have a good search experience which in Commission's words is that the quality of the service is not so good.

For online services where products are provided ostensibly free, considerations like range of contents, privacy protection level and convenience are more prone to be harmed than price.[141] Especially for companies who enjoy strong market power they could lower down the quality of their product or service with little constraint from their incumbent competitors and new entries. Because they have attracted overwhelming users and there is network effect which makes them could behave freely and independently from others. Thus, there should be a way for privacy protection to fit in the context of services or products' scope of quality. Consequently, the degrading of privacy protection could be seen as a lowering of quality.[142]

B. Quality theory of harm

In practice, Commission relies on both qualitative and quantitative evidence to identify welfare harm,[143] and it does not object to consider privacy as part of quality,[144] especially after Microsoft's merger with LinkedIn.[145] However, it limits the scope of consideration to the extent that it will only assess privacy as a quality parameter only if consumers view privacy as an important part of quality and companies compete over it.[146] This is problematic because end users are not powerful enough to affect companies' privacy policies and their behaviors.

Take Facebook's merger with WhatsApp for example, Commission noted in this case that privacy protection level was not the decisive factor for making choice. But this was not because privacy protection is not important, instead it matters consumers, but consumers barely have the ability to affect it. Especially when the market is dominated by big giants, consumers can only passively accept what provided. However, privacy protection as the add-on products of companies' services and products. Though companies may not compete over it directly, it may compete over the main services and products while destroying the add-on one. By destroying the add-on products which they are not compete over, they could obtain advantage and make profits to compensate the free products and services.

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[141] *Microsoft/ Skype* (Case COMP/M.6281) Commission Decision C(2011)7279, paras 81 and 144-169 where Commission recognized the important of quality as a competitive parameter where the price is constrained in double-sided market. See also ibid *Microsoft/Yahoo* para 101; See also, T-79/12 *Cisco Systems, Inc. and Messagenet SpA v European Commission* [2013] ECR II-general, para 117

[142] Lisa Kimmel and Janis Kestenbaum, 'What's Up with WhatsApp? A Transatlantic View on Privacy and Merger Enforcement in Digital Markets' [2014] 29 Antitrust 48

[143] Commission Guidelines on the Application of Article 82 EC Treaty (n91) para 19

[144] *Microsoft / LinkedIn (n3)*. This can also be seen from the consumer-protection nature of EU competition law where merger control also inherited the quality protection as one of its function. See Horizontal Merger Guidelines (n84) para 8: quality as part of consumer welfare; para36: decreasing quality; para 65: deteriorating quality; Guidelines on the Assessment of Non-horizontal Mergers under the Council Regulation on the Control of Concentrations between Undertakings (2008/C 265/07) OJ C 265/6, para 10: quality in an important part of consumer welfare. See also, M Gal and D Rubinfeld, 'The Hidden Costs of Free Goods: Implications for Antitrust Enforcement' (2016) 80 Antitrust Law Journal 521, p 542; Howard Shelanski, Information, Innovation and Competition Policy for the Internet (2013) 161 University of Pennsylvania Law Review 1663; Maureen Ohlhausen and Alexander Okullar, Competition, Consumer Protection, and the Right (Approach) to Privacy (2015) 80 Antitrust Law Journal 121

[145] *Microsoft / LinkedIn* (n3). See Also Commission press release, 'Commission approves acquisition of LinkedIn by Microsoft, subject to conditions' (6th December 2016)

[146] ibid Maureen K. Ohlhausen Alexander P. Okuliar, pp 134 – 137. See also Eleonora Ocello, Cristina Sjödin and Anatoly Subočs, 'What's Up with Merger Control in the Digital Sector? Lessons from the Facebook/WhatsApp EU merger case'(Competition Merger Brief, 2015) < https://ec.europa.eu/competition/publications/cmb/2015/cmb2015_001_en.pdf> accessed 7 May 2020

Furthermore, Commission assessed the impact of quality by looking at consumer's ability to assess and make decision on different level of product quality.[147] Privacy as an indispensable but not vital part of free service, consumers are imperceptibly deprived from switching. Thus, if a company could engage in a conduct which helps them benefit from the competitive advantage of data without any benefit to its users to offset the reduced privacy protection level, it would be extremely harmful for consumers and competition market.[148]

Though gathering more data and providing them to third parties can improve the services to some extent as an efficiency defense, the improvement of service does not necessarily need to be based on degrading another consumer welfare.[149] After merger, companies normally will start to link their databases[150] and with a possibility of changing privacy policy such as storage and transparency requirements.[151] These different forms imply that analysis on privacy as a quality factor should be focused more on incentives and impact of conducts. As such, in counterfactual test, Commission needs to be cautious to merging parties' intention of merger. Once there is an indication that companies may deteriorate privacy protection level and there are no constraints from their competitors, Commission should be able to ask them to provide certain commitments to offset this side-effect. [152]

Nonetheless, there is an obvious trend that privacy protection has emerged a small, but rapidly expanding, dimension of competition among companies.[153] In Apple's 2019 Worldwide Developers Conference, it presented special privacy protection of "*privacy-focused sign in*" as one of its selling points.[154] This development proved that privacy could be an important competition point. Moreover, Microsoft has moved LinkedIn's cloud service to Microsoft's Azure public Cloud to provide higher privacy protection.[155] But if Commission, as competition authority, just negatively reacts to it and leaves everything for data protection provisions, this might reduce companies' motivation to promote it as using data to the best of it is always profitable for them.

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[147] Ariel Ezrachi and Maurice E. Stucke, 'the Curious Case of Competition and Quality' (2015) University of Tennessee Legal Studies Research Paper No. 256 / Oxford Legal Studies Research Paper No. 64/2014 227-257 < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2494656> accessed 18 April 2020. OECD, quality in competition analysis (n123) p79

[148] Maria C. Wasastjerna, 'the implication of big data and privacy on competition analysis in merger control and the controversial competition-data interface' (2019) 30 European Business Law Review 337; Lisa Kimmel and Janis Kestenbaum (n142)

[149] For guidance relating to efficiencies see Horizontal Merger Guidelines (n84) paras 76 – 88; See also Non-horizontal Merger Guidelines (n144), paras 13, 52 – 57, 77 and 115 – 118

[150] Peter Swire, Protecting Consumers: Privacy Matters in Antitrust Analysis (Center for American Progress, 19 October 2007) <https://www.americanprogress.org/issues/economy/news/2007/10/19/3564/protecting-consumers-privacy-matters-in-antitrust-analysis/> accessed 4 May 2020

[151] Samson Esayas, 'Privacy as a Non-Price Competition Parameter: Theories of Harm in Mergers' (2018) University of Oslo Faculty of Law Research Paper No. 2018-26 < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3232701> accessed 17 April 2020

[152] Kalpana Tyagi (n73) p 295

[153] Maureen K Ohlhausen and Alexander P Okuliar (n144)

[154] Sugandha Lahoti, WWDC 2019 highlights: Apple introduces SwiftUI, new privacy-focused sign in, updates to iOS, macOS, and iPad and more (4 June 2019) <https://hub.packtpub.com/wwdc-2019-highlights-apple-introduces-swiftui-new-privacy-focused-sign-in-updates-to-ios-macos-and-ipad-and-more/> accessed 7 May 2020

[155] Jordan novet, LinkedIn is moving to Microsoft's Azure public cloud three years after $27 billion acquisition, (*CNBC*, 23 July 2019) <https://www.cnbc.com/2019/07/23/linkedin-is-moving-to-microsoft-azure-three-years-after-acquisition.html> accessed 23 April 2020

In conclusion, harms existed in data-concentrated mergers are not standalone. They interact with each other, for example, addressing foreclose effect not only secures competitors' access and expansion, but also addresses concerns such as consumers' choices and privacy level. The impact of zero price is substantially, and the decisions consumers made are not necessarily objective and rational. So, Commission should aim to ensure that consumers could get the best service at the lowest cost where consumers are incapable of measuring the reasonable cost personally and individually.[156]

[156] See, John M. Newman, 'Antitrust in Zero-Price Markets: Foundations' (2015) 164 University of Pennsylvania Law Review 149; David S. Evans, Antitrust Economics of Free (*Competition Policy International*, 20 May 2011) <https://www.competitionpolicyinternational.com/the-antitrust-economics-of-free/> accessed 17 April 2020

4. Remedies for Data-concentrated Merger

When conducting merger assessment, Commission has to carefully balance the pro-competitive and anti-competitive effects where there are efficiency gains.[157] In practice, Commission is less likely to block a merger just due to non-price concerns,[158] which gives free-service market's merger a leeway because there is no price presented. However, the existence of consumer harm is presumably longer than it was in traditional market due to the stickiness on market power.[159] Thus, though it is hard to precisely measure and quantify consumer harms in data concentrated merger, an indication of merging parties' intention and ability to anti-competitive conducts should be addressed through remedies where a total ban is unnecessary.

4.1. Pre-merger submission

Indeed, competition rules may not be the perfect framework for addressing ex-ante concerns and competition authorities may not have the competence to intervene before parties' notification.[160] However, as seen from Facebook's action of lowering WhatsApp's privacy protection level which violates WhatsApp's previous public announcement regarding its acquisition by Facebook,[161] it makes sense to see if Commission could take companies' pre-merger promise into account when making assessment.

If it is not professional, it is not common for consumers to track and analyze the changes of companies' privacy policies.[162] Companies need to think from the very beginning on how to use consumer data in a way that they will not trigger consumers' unsatisfaction and authorities' investigation.[163] Thus, before merger, companies, like WhatsApp, will give oral promise to users that they will keep their privacy protection level post-merger on public conference or meeting. However, without Commission's intervene, this kind of claim does not have any legal effect. Acquirer could still change its policy post-merger. After all, the promise is not made by the acquirer, but the acquired company which maybe even not exist after merger. However, in the same case, to the opposite of Commission approach, Federal Trade Commission adopted another approach. It asked Facebook to comply with WhatsApp's promise on WhatsApp users' privacy protection level and achieve their public statements about privacy protection as a

[157] *Tetra Laval / Sidle* (case COMP/M.3255) Commission Decision of 7 July 2004; Case C-12/03 P Commission v Tetra Laval [2005] ECR I-00987

[158] Stucke, Maurice E. and Allen P Grunes, *Big data and competition policy* (Oxford University Press 2016), p115. See also Commissioner Vestager speech(n106), where she expressed that we shouldn't be suspicious by data concentrated merger which does not necessarily lead to a block decision. This can also be seen from Commission decision in *Facebook / WhatsApp* (n9). In this case, Commission admitted that consumers value their privacies, however, it shielded from assessing whether privacy protection level constitutes an important part of service quality and whether it will be deteriorated post-merger.

[159] Jacques Crémer, Yves-Alexandre de Montjoye and Heike Schweitzer (n112)

[160] Josef Drexl, 'Designing Competitive Markets for Industrial Data – Between Propertisation and Access' (2016) Journal of Intellectual Property, Information Technology and Electronic Commerce Law pp.43–44 <https://www.jipitec.eu/issues/jipitec-8-4-2017/4636> accessed 06 January 2019

[161] See table A

[162] On average, it would take 244 hours per year for consumers to read every company's privacy policy they used. But this never happen as people just click agree with the term of conditions. See McDonald, A. M. and Cranor, L. F., 'The Cost of Reading Privacy Policies' [2008] A Journal of Law and Policy for the Information Society, Privacy Year in Review p 17

[163] Margrethe Vestager (n105)

condition for the clearance of the merger.[164] On the other hand, some of the companies even will design privacy policies which include what would happen if they merge with another company. They wish to use this to dispel consumers' worries, but this designation has not spread widely.

During investigation, Commission could pay attention to merging parties' activities. Once companies promise things like they will maintain current privacy protection level, Commission could instead ask them to follow their promise to consumers. In this way, potential anticompetitive effect could be addressed through the easiest way with lowest cost. And consumers would understand well on what will happen to them as these companies' announcements are published through media and news.

4.2. Merger assessment: commitments

4.2.1. Compliance with data protection requirements

When taking the role of competition authority, Commission does not have a spill-over right which extends to data protection concerns. However, with a reference to data protection requirements, it could serve as a better tool in offsetting the competition concern of privacy consumer harm which is hard to be completely addressed through maintaining a competitive market indirectly.[165]

For addressing the above-mentioned consumer harms of limiting consumer's choice and multi-homing right, a reference to the principle of data portability could serve as a good example.[166] With the guarantee of data portability, it would be easier for consumers to switch from one to another. As such, the access of new entries and development of smaller incumbents is secured, which is an important part for maintaining a competitive market.[167] In a similar vein, the serious concern of data-driven lock-ins could be eased through merger control.[168] Furthermore,

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[164] Jessica L. Rich, 'Letter to Erin Egan' (10 April 2014) < https://www.ftc.gov/system/files/documents/public_statements/297701/140410facebookwhatappltr.pdf> accessed 7 May 2020

[165] In many of Commission's decisions, the analysis always conducted with a note of " without prejudice to data protection rules", specifically, in *Apple / Shazam* case (n8) when assess Apple's ability to use Shazam's data to force Apple's competitors in a competitive disadvantage, Commission considered the legal / contractual constraints imposed by GDPR in relation to Apple's use of Shazam's customer information. And all the assessment was conducted under the assumption that Apple must use this data in a legal way (paras 221 – 238). Pre-merger, Shazam only delete parts of its customer datasets in order to comply with article 32 GDPR which requires company to design compatible privacy protection policy. While this deletion does not "exclude Apple's accessing customer information" as a whole(para 224), Commission still make a special notice on Apple's obligation under data protection provision. See also German's investigation towards Facebook. EDPS Buttarelli stated in a 2015 speech that "we should be prepared for potential abuse of dominance cases which also may involve a breach of data protection rules for example, some voices have been put on institutional cooperation mechanism between digital regulators. See Nicolo Zingales, 'Data Protection Considerations in EU Competition Law: Funnel or Straightjacket for Innovation?' (2016) < Data Protection Considerations in EU Competition Law: Funnel or Straightjacket for Innovation?> accessed 17 May 2020; Paul Nihoul and Pieter Van Cleynenbreugel, 'The Role of Innovation in Competition Analysis' (2018) < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3158008> accessed 17 May 2020

[166] Jacques Crémer, Yves-Alexandre de Montjoye and Heike Schweitzer (n112); See also Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) [2016] OJ L119/1, Article 20

[167] Kevin Coates, *Competition Law and Regulation of Technology Markets*, (Oxford University Press, 2011)

[168] Jacques Crémer, Yves-Alexandre de Montjoye and Heike Schweitzer (n112) p 58

GDPR only provides a minimum protection level for data protection and it allows the adoption of stricter and specific rules.[169] Thus, the standard for data portability could be varied among merger entities according to their market power.[170] For dominant merging parties, Commission could impose higher standard beyond data protection requirements to ensure consumers benefits. This could be seen from FTC Commissioner Harbour's suggestion on the establishment of a firewall between datasets of the merging parties in Google's acquisition of DoubleClick.[171]

For dominant firms, it is also important to impose protocol and data interoperability on them.[172] Such an approach has been adopted by Commission in Microsoft case which required Microsoft to provide informational interoperability.[173] And this has subsequently been confirmed by CJEU where it stated that lacking of such interoperability would reinforce Microsoft's market position … particularly "*it induces consumers to use their service in preference to its competitors*".[174] However, due to the possible detrimental effect of interoperability on innovation[175] and privacy harms[176], the Court has also held that such a requirement has to be kept to a minimum level to ensure effective competition and the indispensability of such a requirement should not go beyond the degree of "*remaining as a viable competitor and the required information is the only viable source for achieving the degree of interoperability*".[177] Thus a full grant of interoperability should be applied in compliance with proportionality principle.

Furthermore, regarding data protection provisions, they do contain certain norms that governing the potential use of data, but they do not protect data as a consumer welfare which

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[169] GDPR (n165) Recital 10 & article 89, See also Council of European Union: 'Hungarian Delegation: General Data Protection Regulation, Minimum Harmonization Clause' (Brussels, 24 October 2014) <http://data.consilium.europa.eu/doc/document/ST-14732-2014-INIT/en/pdf> accessed 28 April 2020. These provisions indicate that GDPR is a minimum harmonization measure.

[170] Jacques Crémer, Yves-Alexandre de Montjoye and Heike Schweitzer (n112).

[171] Martin Moore, Damian Tambini, *Digital Dominance: the Power of Google, Amazon, Facebook, and Apple*, (Oxford University Press 2019) p 89

[172] According to the authors view, Protocol interoperability refers to the ability of two or more services or products to interconnect with each other technically, but it is different from the access to data resulting from protocol interoperable systems. A full protocol interoperability refers to standards that allow substitute services to interoperate, i.e., messaging systems. Data interoperability is similar to data portability, but with a continues, potentially real-time access to personal or machine user data. Existing data interoperability mechanisms typically rely on privileged Application Programming Interfaces which needs users' consent. See Jacques Crémer, Yves-Alexandre de Montjoye and Heike Schweitzer, Competition Policy for digital era (n112)

[173] *Microsoft* (Case COMP/C-3/37.793) Commission Decision of 24 March 2004 C(220004)900 final; *Microsoft (tying)* (Case AT.39530) Commission Decision of 6 March 2013 C(2013) 1210 final

[174] Case T-201/04 *Microsoft v Commission* (n100) para 422

[175] Because with interoperability requirement, companies might be limited to some development of their products or services. Art 2 no 12 Proposal for a Directive of The European Parliament and of The Council on Certain Aspects Concerning Contracts for the Supply of Digital Content and Digital Services. See also Wolfgang Kerber, Heike Schweitzer, Interoperability in the Digital Economy [2017] Forthcoming in: Journal of Intellectual Property, Information Technology and Electronic Commerce Law & MAGKS, Joint Discussion Paper Series in Economics, No. 12-2017; Ian Brown and Christopher T. Marsden, *Regulating Code: Good Governance and Better Regulation in the Informational Age* (MIT press, 2013) p 39

[176] Privacy risks mainly arise from unavoidable imperfect technical and consumer control mechanism which would bring to misuse of personal data due to multiple service providers access to user's personal data. Chris Marsden, Rob Nicholls, Interoperability: A solution to regulating AI and social media platforms (19 September 2019) <https://www.scl.org/articles/10662-interoperability-a-solution-to-regulating-ai-and-social-media-platforms> accessed 28 April 2020

[177] Case T-201/04 *Microsoft v Commission* (n100) para 345, the requirement of keep it to the minimum level. See also 352 about proportionality test of informational interoperability and para 357 about indispensability test of informational interoperability.

may be harmed from the increasing of market power.[178] However, through enhancing companies' data protection responsibilities, Commission could improve the consumer-disadvantage position.

4.2.2. Secure competitors' access

There are lots of considerations that Commission needs to take into account in merger assessment,[179] and these considerations are always interacting with each other. But in digital merger area, as seen from the merger cases till now, competition concerns are more limited to foreclose effect when conducting the competition assessment.[180] Therefore, the main focus of the following part will be on how to make sure that merging parties will not have exclusionary conduct as a result of increasing market power.[181]

A. Tying and bundling

Through tying and bundling to foreclose new entries and weaken incumbents market power mainly happens on merger involving multi-service providers. Commission's commitment requirements in Microsoft's merger with LinkedIn provides a good example to this. In this case, Microsoft is a multi-service provider which activates in operating system, software solutions, online advertising and et cetera markets.[182] While LinkedIn is a professional social network service which could be pre-installed in Microsoft's operating system. Considering merging parties intention of integrating two services and potential competition harms that might arise from it, Commission ordered Microsoft to provide a commitment of not integrating LinkedIn into Outlook service for a certain period.[183] This perfectly protected the competition market, secured competitors' access to professional social networking market, and protected consumers away from potential tying and bundling.

Stronger market players would be even more engaged in harvesting and tracking various customer activity to get more data. This not only benefits their advertising services, but also helps them to foster network effects which could help them to keep stronger and squeeze new entries and small competitors.[184] Thus, Commission needs to consider companies' power which they could use to bundle or tie products and services to consumers.[185]

B. Refusal to supply

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[178] Dominant companies have a special responsibility of away from abusing their dominant position. However, by imposing unfair (privacy) terms of conditions, they actually comply with data protection provisions. And this doesn't amount to abuse of dominant position as competition authorities are reluctant to identify consumer harms which arise from increasing market power directly. Commission Guidelines on the Application of Article 82 EC Treaty (n91) Para 9

[179] EUMR(n44)

[180] Especially non-horizontal mergers where there are more efficiencies brought, thus competition concerns are more limited. See Horizontal Merger Guidelines (n84) paras 13 and 17-19

[181] Commission Guidelines on the Application of Article 82 EC Treaty (n91) the exclusionary conducts included tying and bundling, exclusive dealing, predation and refusal to supply and market squeeze. Paras 75-90 Therefore, the following part is structured according to these factors.

[182] *Microsoft / LinkedIn* (n3), para 2

[183] *Microsoft / LinkedIn* (n3), paras 409-438, particularly paras 416 and 417

[184] Basically, network effects means that when large amounts of people have chosen a service, then there will be more people choose to use it. In turn, the potential and existing competitors also need massive data to compete with them, however, these users are all choosing the stronger providers. See Allen P. Grunes, 'Another Look at Privacy' (n89) p1120

[185] EDPS 2014 preliminary opinion (n5)

Significant anti-competitive effects exist both when current constraints are likely to be eliminated and when future entrants are getting harder. But stop supplying data where it is valuable and unique would be one of the easiest ways for merging parties to foreclose competitors. Thus, it is necessary to ask merging parties to keep certain databases open when such databases constitute an important input and there are only a few alternatives.

In Thomson's merger with Reuters, merging parties use the easy market entry defense as a constraint force for their merger.[186] For facilitating new entries, Thomson promised that they would open their '*reasonably necessary assets*' for competitors.[187] However, Commission came to the opposite conclusion by finding that the given a successful new entry of Simply Stocks cannot justify the existence of barriers to entry.[188] And the expression of '*reasonably necessary assets*' was insufficient to allow new entries to explore and develop a competitive products or services.[189] Because when using the term of '*reasonably necessary assets*', the key assets of "*personnel, intangible assets contributor and customer database are not included*".[190] In this way, competitors can only get access to part of the important data base. Thus, Commission ordered the merging parties to allow the purchase of their key datasets by their rivals and potential entrants, including customer base.[191] By doing so, the new offerings and new entrants could be secured and served as a competitive constraint force.[192]

This case illustrated that once companies have exclusive control over certain inputs and competitors lack core technical assistance to obtain such database, this will effectively foreclose competitors' access and, in turn, consumers' choices are limited. In parallel, in the advertising market, the price of advertisement will increase as there are less or even no alternative competing providers. However, regarding the commitment of open access of certain databases for competitors, Commission needs to be cautious on special data protection requirements. This is because on the one hand, Commission stressed a lot on foreclosure effect through refusal to supply, but on the other hand, companies also have a special responsibility under data protection law to guarantee the privacy of personal information. To this extent, it is easy for companies to seek derogation under data protection laws to justify their refusal of supply. As such, Commission needs to bridge the link between the two sectors to ensure that both laws are enforced effectively.[193] In addition, when deciding the openness of databases, the concerned commitments must be proportionate,[194] especially considering data retention.[195]

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[186] *Thomson Corporation / Reuters Group* (Case COMP/M.4726) Commission Decision of 19 February 2008 C(2008) 654 final, paras 279 and 359-360

[187] ibid para 467

[188] ibid para 361

[189] ibid para 465

[190] ibid para 466

[191] ibid Paras 475–476, 480

[192] Because there are significant costs on the "collection, normalization and distribution of data and if it is not compensated to the minimum level, the viability of new offerings might be hindered". As for new entrants, Commission found that reputation is a vital consideration for consumers' decision-making in financial information business sector. Without a customer base, it is hard for new entrants to attract customers in short period. For detail analysis, see paras 465-481 of *Thomson Corporation / Reuters Group* (n186)

[193] EDPS 2014 preliminary opinion (n5) p31

[194] Article 30 EUMR (n44)

[195] The limitation to customer's data retention must be proportionate is advocated by the president of French competition authority. Bruno Lasserre, 'New Frontiers of Antitrust' (22 February 2013) < https://www.concurrences.com/en/archives-seminaires/new-frontiers-of-antitrust-paris-22-feb-2013/> accessed 15 May 2020. The same idea could be found on Dutch's 'compare and forget' method in WhatsApp's investigation. In this investigation, Dutch competition authority came to the conclusion that WhatsApp is allowed short-term access to users' full address book to identify whom of the contact persons is also WhatsApp users, but once, it is

4.2.3. Other exploitative behaviors

There is a ACE test for Abusive exclusionary conduct, for further information see p384 (competition law 'text book')

In reality, consumers are confronted with the 'take-it or leave-it' as a whole option when using online services. To make more profits, instead of charging higher price from the paying market, acquirers tend to covertly ask for excessive information from the acquired entity's users or require them to authorize their information for more purposes as a compensation.

Regarding this, Commission has to make sure that companies will not conduct exploitative behaviors when conducting merger assessment. Assessing what amounts to excessive collection and use of data would be hard, but Commission could ask the merging parties to specify their use of purposes and set limitations on the use of merged databases for other services which would not have been used.[196] As an alternative, a reference could be made to the principle of data minimization[197] as a benchmark.[198] By looking at this, Commission could draw a conclusion on the amount and types of data which is deemed to be necessary and relevant for merging parties to conduct their activities. Thus, the collection of those data which falls outside Commission's conclusion should not be approved and merging parties should commit that they will not act to the contrary of Commission's conclusion.

Another exploitative behavior could be seen from the fact that with more data collected and tracked, through analyzing this data, companies could target consumers with different prices or even alter product characters with the aim of maximizing profits.[199] However, consumers are unconscious of these changes as they normally only have one account for each application. Thus, it may be necessary to ask for a commitment on that merging parties will not make predatory or discriminatory price to different groups of people with the same product.

In conclusion, remedies for data concentrated merger could generally be considered from two aspects. Firstly, the regulation boundaries on privacy harms is blurred between data protection and competition rules. This is also seen from EDPS initiative which goes beyond a purely data protection scope and requires a comprehensive assessment of merger implication on the protection of personal data, especially in tech sector.[200] Thus, it is better to make a reference to data protection requirements.[201] Secondly, the remedies could also be addressed through

finished, WhatsApp has to delete all the information immediately. See Dutch Data Protection Authority, 'Investigation into the Processing of Personal Data for the 'WhatsApp' Mobile Application by WhatsApp Inc.: Report on the Definitive Findings' (January 2013) < https://www.slideshare.net/zappullagaetano/rap-2013-whatsappdutchdpafinalfindingsen> accessed 15 May 2020

[196] See letter from Article 29 Working Party to Google Inc. <http://ec.europa.eu/justice/data-protection/article-29/documentation/other-document/files/2012/20121016_letter_to_google_en.pdf> accessed 17 May 2020

[197] GDPR (n166) Article 5.1.c

[198] Francisco Costa-Cabral and Orla Lynskey, 'Family Ties: The Intersection between Data Protection and Competition in EU Law' [2017] Kluwer Law Online 11, pp 33-37. See also Germany investigation towards Facebook's abuse of dominant position (n11). In this case, Bundeskartellamt said that by imposing unfair terms of condition, Facebook violates data protection rules and this amount to abuse of its dominant position.

[199] Competition and Markets Authority (n98)

[200] Big data and digital clearing house, see initiatives list at <https://edps.europa.eu/data-protection/data-protection/reference-library/big-data-and-digital-clearing-house_en> accessed at April 25, 2020

[201] Such a reference could also help to produce synergies between GDPR and EUMR by limiting anti-competitive behaviors which may arise form insufficient fulfillment of broad data protection provisions. See Kalpana Tyagi (n73) p 297

traditional remedies to secure competitor's access and prevent merging parties to have the intention and possibility to abuse their market position potentially.

5. Conclusion

Recognizing the impact of data concentration on both sides of the market is not controversial now. The problem faced is just how to address the concerns within Commission's competence in a proportionate way, especially concerns on 'free side' market. Regarding this, it has to be noticed that Commission's competence in relation to merger assessment is quite broad and the standard of proof of potential anti-competitive effects is low. To some extent, this may indicate that Commission is actually bound to assess both sides of the market without suspecting if privacy degradation consumer harm may fall outside its scope of competence.

Once the scope of competence is established as existing in both markets, then applicable theories of harm must be emphasized. For harms in paying market, the most significant one is foreclosure effect which could subsequently change into consumer harm of limiting choices. For harms on 'free side', non-monetary price and quality theories of harm are expected to be the most relevant theories as they are closely linked to the role of privacy in the transaction between end users and sellers. Last but not least, for avoiding a "race-to-bottom" result, the role of commitment has to be stressed when balancing potential efficiencies and harms.

It is important to ensure that 'SIEC test' still works well in digital economy era for maintaining an undistorted market and protecting consumer welfare. Especially in EU, welfare of consumer is put at a central point under competition policies. But as seen from above discussion, the current merger control regime is enough for addressing data concentrated concerns. The question is just where there is a gap and inconsistency in protecting competition market and consumers from anti-competitive conducts, Commission should work to foster the coherency and protection of rights by adapting existing tools to new changes.[202]

[202] For example, in 2016 EDPS preliminary opinion (Opinion 8/2016, n21), EDPS proposed to establish a digital enforcement Clearing House. This Clearing House is a voluntarily network where different digital sectors work jointly to ensure that the best outcome for individual's rights and consumers, such as consumer welfare in competition sector.

Supplement A

Case Name	Key Data Concentration Concern	Result / Commitment	Implication
TomTom / Tele Atlas (2008)	Concentration of data in digital map market and merging parties' incentive to deteriorate the protection for consumers' confidentiality information. (paras 274-276)	Unconditionally cleared after phase I investigation as Commission found that though TomTom is able to foreclose competitors and increase price, but it lacks incentive to do so. (para 230)	1. The dimension of confidentiality was given at an earlier stage by referring to 'Commercially Sensitive Data'. (para 252) 2. Privacy was treated as quality metaphorically by referring to the reputation of Tele Atlas product. (paras 245 - 247 & 275)
Google / DoubleClick (2008)	Commission expressed its concern over the use of customer's online behavior data from DoubleClick's DFP & DFA services which may strengthen Google's market position in online advertising market. (paras 179 - 190)	Commission found that both parties do not have the ability to combine and use the data to foreclose competitors, and the data is available to be purchased from third party post-merger. (paras 364 - 365) Finally, Commission cleared the merger unconditionally after phase II investigation.	1. Personal data was the first time treated as an asset in merger control cases. (para 254 & footnote 141) 2. In this case, former commissioner Alumina has predicted that '*Commission has not come across a case where personal data could be used to breach competition rules, but personal data may become a competition issue*'.
Facebook / WhatsApp (2014)	The main concern in this case is data concentration impact on online advertising market. (para 70)	Commission unconditionally cleared the merger after phase I investigation by concluding that even if WhatsApp has exclusive control over WhatsApp's user data, there still remains large amount of data which is not within Facebook's exclusive control. (para 189)	1. Commission assessed the impact of data concentration on 'paying side' customers. (part 5.3.3.2) 2. Privacy concern falls outside the scope of Commission's competition assessment. (para 164)

(Recent years' data concentrated merger at Union level)

Case Name	Key Data Concentration Concern	Result / Commitment	Implication
Microsoft / LinkedIn (2016)	The foreclosure effect to LinkedIn's competitors in PSN market due to tying and bundling. (para 351)	The Commission finally cleared the merger on condition that Microsoft cannot integrate LinkedIn in its system as the data is not available to any third party at that time after phase I investigation. (paras 452 - 459)	The Commission firstly announced that personal digital privacy constitutes an important parameter in competition assessment and privacy concerns fall within the scope of Competition law. (footnotes 330)
Apple / Shazam (2018)	Commission considered how Shazam's music chart data could complement Apple's services and will Apple monopolize Shazam's dataset for improving its own music streaming service. (para 317) In addition, the Commission also examined whether Shazam's data amounted to 'commercially sensitive information' which would put their rivals in a competitive disadvantage. (para 221)	Commission found that Shazam's dataset was not significantly different to or more comprehensive than any other competitors' dataset. (para 326) Finally the Commission cleared the merger unconditionally after phase 2 investigation.	1. Commission established a new framework to assess the value of data by referring to "4Vs" of data and expressly admitted that the disadvantage created by merging parties to their rivals of accessing to sensitive data constitute a harm to anticompetitive market. (paras 318 - 329) 2. However, the application of '4Vs' test is only limited to data as an input.

(Recent years' data concentrated merger at Union level)

Supplement B

Body	Time	Reason	Result
European Commission	2 December 2019	The way how user data is collected, used and monetized (including advertising activities)	Preliminary investigation (in process)
European Commission	18 May 2017	Providing misleading information of that the technology does not allow it to link Facebook users' and WhatsApp users' accounts	€ 100 million fine
German (*Bundeskarte -llamt*)	2 February 2020	Abuse of dominant position in relation to its use of personal data and impose unfair privacy terms(the interlinkage of market power and data)	Required Facebook not to combine WhatsApp users' data and change its data policies
Belgium *(Data Protection Authority)*	February 2018	Tracking users' online activities via cookies while without a valid consent from users	Erasing all the information which they obtained illegally, and stop tracking or a fine of € 250, 000 per day of this practice
Spain *(Agencia Española de Protección de Datos)*	11 September 2017	Hoovered up large amounts of user data without sufficiently tell users how their data was used	€1.2 million fine
Netherland *(Autoriteit Persoonsgeg evens)*	16 May 2017	Targeted advertising regarding users' sextual preferences	Stopping the tracking and targeting advertisement
France *(Commission Nationale de France)*	16 May 2017	Unfairly track users' browsing activity online and offline without sufficiently inform them; Collecting more personal information for advertising purpose without a legal basis	€ 150,000 fine

(Fines and investigations on Facebook by European Competition Authorities post 2014 merger)

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